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NEC-ICAIEA-2K21

16th & 17th July, 2021

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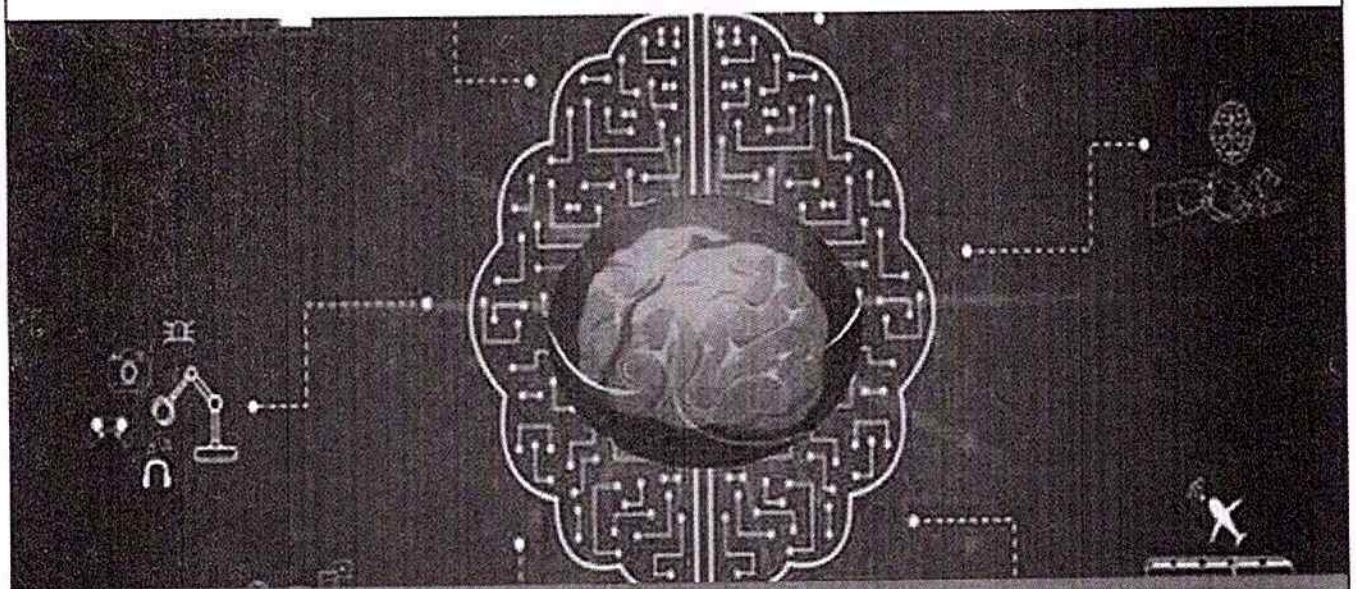

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LIST OF FULL LENGTH PAPERS SELECTED FOR PROCEEDINGS IN

International Conference On

Artificial Intelligence and Its Emerging Areas

-

REF. NO	TITLE OF THE PAPER AND AUTHOR(S)	Page No.
	Artificial Intelligence and Its Emerging Areas -NEC-ICAIIA 2K21	
1.	A Data Mining Based Model For Detection Of Deceitful Behaviour In Water Consumption - Tejasri Choudi,B.V.Satish, V.Naga Jyothi, K.Navya	1-5
2	A Machine Learning Framework For Prediction Of Heart Disease, Ramasetty Ramu,Kota Jagadeesh,Chanti Rajamohan Reddy,V. Mahesh Babu	6-10
3	A Supervised Learning Algorithm For Credit Card Fraud Detection, - Guggilam Sai Sri, Gummadilli Gouthami, Potluri Srividya, M. Mamatha	11-15
4	Amazon Product Review Sentiment Analysis Using Machine Learning - Ms Mohammad Arsha Sultana,P. Rakesh, M. Sandeep, G. Jagadeesh	16-20
5	An Interactive Study Of Thyroid Disease Prediction Using Machine Learning - D. Lokesh Gupta, D.Lokesh Gupta, K.V.Narasimha Reddy, D.Ramesh, V.Veerendra	21-25
6	Autoregressive Integrated Moving Average Model For Prediction Of Crypto Currency, - Pokuri Jaya Venkata Naga Sudhakar,Alladi Anil,Avula Venkata Rami Reddy,V. Mahesh Babu	26--29
7	Biometric Identification Scheme With Efficient Privacy-Preserving Mechanism For Cloud Computing Service. - Shaik Ruksana,Bandaru Naga Siva Satsuryatejaswi,Yadavalli Yedukondalu,M. Mamatha	30-34
8	Bitcoin Price Prediction -Mrs R.Padmaja,K.V.D Hanisha, B Amulya, M Harika	35-38
9	Calories Burned Prediction, - Niharika Motupalli, B.Siva Kanaka Raju Shaik Mehataj , U. Jhansi Rani, T .Bhavani	39-45
10	Cartoonize Image Using Deep Learning - Gouse Mastan Vali,D.Vamsi Krishna, A.Sairam,K.S.Lakshmi Narayana	46-54
11	Children Speech Recognition Using Machine Learning Methodologies - Dr.T.V.Sai Krishna, R Venkat	55-60

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Principal
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Guntur (Dist.), A.P.

12	Clarification Of Webbing Through Cloud Computing Technologies - Amara.S.A.L.G.Gopala Gupta.Dr. Gudapati Syam Prasad	61-65
13	Convolutional Lstm Model For Sentiment Analysis On Social Big Data - Raghuveer Pachipulusu.V.Ananth Reddy. R.Sai Kiran. T.Vignesh	66-72
14	Data Preprocessing For Efficient Prediction In Customer Relationship Management. - Patur Ganga. K.Arun	73-78
15	Design And Experimental Study Of Automatic Colour Sorting By A Robotic Arm System - T.Lakshmibai	79-82
16	Detection Of Autism Disorder Based On Eeg Signal Using Deep Learning Methods -Ranjani M.P.Supraja	83-87
17	Detection Of Online Public Shaming With Offensive Content On Twitter. - Gutta Sai Durga.Gopu Sandhya.Jonnalagadda Madhavi. Dr. S.V.N.Srinivasu	88-91
18	Detection Of Phishing Attacks Using Natural Language Processing And Logistic Regression Model. - Surubula Thirupathi Rao.Pothukuchi Mahesh Babu.Rayala Venu.V. Mahesh Babu	92-98
19	Detection Of Social Network Mental Disorders Through Mining Of Online Social Media. - Battula Venkata Ananta Mehar Gopi.Rajarapu Venu Babu.Maddineni Naveen .Dr. S.V.N.Srinivasu	99-103
20	predections in healthy population through machine learning	104-108
21	Diabetics Prediction using Machine Learning Techniques. - Pathan Sajida. S.Amulya . V.Nandhini	109-114
22	DL-CNN Framework For Malicious Social Bots Detection. - Syed Fathima.Ponnapati Mallika.Gandru Akhilendra Chowdary.M. Mamatha	115-120
23	Door Security System Using Face Recognition -Dr A Srinivasa Rao.K.G.J.Prasanth. M. Rama Rao	121-123
24	ECG Classification With Convolutional Neural Networks - S V N Sreenivasu.T Bhargavika.B Anusha .P Jayasri	124-129
25	Emotion Recognition From Multimodal Data(Speech. Video. Text) Based On Deep Learning Techniques - D.P.Supraja	130-137

Principal
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26	Estimation Of Population Analysis - Tarun.G.Tarun.T.Purnavamsi.K.Vivekreddy	138-142
27	Eye Ball Cursor Movement Using Opencv - B.Preethi.D.Bharadwaja.B.Preethi. K.Charithra Lavanya.N.Sony	143-147
28	Face.Age And Gender Recogntion System Based on Deep Neural Networks - Gudapati Syam Prasad.K.Narendra Babu.N.Hemanth Kumar.K.Sriniivas	148-154
29	Facial Expression Recognition With Convolutional Neural Networks - S. Siva Nageswara Rao.S.Ramya. T.Anantha Lavanya	155-162
30	Fake Currency Detection. - Mr.Sk.K.M.Basha , Yalagala Hema Latha. Gatakala Venkata Sravya Bhavani. Macharla Maitili	163-167
31	Fake News Detection - Gangasani Likitha. I. Navya Sri. D. Swetha	168-175
32	Fake News Detection Using Machine Learning - Srikanth Mylapalli.Mylapalli Ramesh	176-180
33	Forest Fires Detection Using Machine Learning Algorithms - N.S.Sesi Kiran.P. Lakshmi Narayana. Sk. Mastanvali. P. Nivas	181-185
34	Functioning Of Artificial Intelligence In An Self-Driving Vehicle - A Review -Penugonda Surya Teja.None	186-189
35	Generic Recommendation Engine Using Hybrid Filtering Model - G Prabhakara Reddy.O Ramesh. Ch Anil	190-200
36	Head Motion Detection - Dr A Srinivasa Rao.M.Prathyusha. Y.Rajeswari	201-203
37	Heart Disease Prediction Using Machine Learning - Jhansi Lakshmi Manukonda .R. V. P. S. Rekha. T. Divya. G. L. N. Jayaprada	204-208
38	House Price Prediction - Bodlapati Sowmya Reddy.M. Yamini Priya. P. Manasa	209-213
39	Image Captioning Using Deep Learning - Y E V Pratap Kumar Kuchi.M.Sireesha. G. Sai Akhil. K. Hema Sai Mourya Gupta	214-219

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NARASARAOPETA ENGINEERING COLLEGE
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40	Image Classification Using Object Detection With YOLO Algorithm. Shaik Bhadhar Shareef.Putchakayala Ramesh.Angajala Anil.G. Sambasiva Rao	220-223
41	Implementation Of Video Steganography Cryptography System For Iot-Based Cloud Computing Security. - Sanivarapu Sagar Reddy.Mallavarapu Nikhil.Chevala Venkatesh.Dr. S.V.N.Srinivasu	224-228
42	Inform Me-Family Gps Locator - Oruganti Ramesh.G Prabhakara Reddy. Ch. Anil	229-233
43	Ipl Score Prediction Using Machine Learning Methods - Rajyalakshmi Dondapati.N.Likitha.M.Anmisha	234-241
44	Liver Disease Prediction Using Machine Learning Methods - Sravana Sandhya Rani Karnati.K. Sravana Sandhya Rani. B.V.Gayithri.K.Vijayalakshmi	242-249
45	Loan Prediction System - Divya Gopavarapu.K.Manasa.A.Akhila.M.Sireesha	250-255
46	Lung Cancer Prediction - Naga Mallika Gude.M. Navya Sri. B. Sukanya	256-263
47	Map Reduced Segmentation Clustering For Big Data Analytics Using Extended K-Mean Clustering Technique - Mvs.Prasad	264-270
48	Mask R-Cnn For Fire Detection - Razeena Begum Shaik.S Yogananda Datta . M S V Manoj	271-276
49	Melanoma Prediction Using Deep Learning - Aishwarya Nallapati.D. Jaya Tejaswini. J. Prashanthi. T. Siri Chandana	277-280
50	Multilevel Hierarchy Based Privacy Preserved Profile Publishing In Cloud Environment. - Esthala Abhishek.Kambhampati Adinarayana.Battula Ramesh.G. Sambasiva Rao	281-286
51	Music Recommendation Application Based On Facial Expressions - Ms Mohammad Arsha Sultana.Abdul Saherabegum. Akhila Umma. Guthula Jayasri Sai Nikitha	287-290
52	Mutual Fund Prediction Using Machine Learning - Shaik Nannu Saidavali.N.Vinay Chandra Pal. K.Bhaskar Reddy	291-295
53	Network Coding Techniques To Store The Data Securely In Cloud. - Guru Brahmam Madala. Vijay Anand R	296-301
54	Network Spam And Fake User Detection In Online Social Networks Using Support Vector Machine. - Majeti Pavan Kalyan.Anchula Sreekanth.Ravi Mahesh Babu.G. Sambasiva Rao	302-307
55	Next Word Prediction Using Recurrent Neural Networks - Srikanth Kolisetty.B. Venkateswarlu. S. Siva Sai Kumar. T. Uday Kumar	308-313

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56	Nobel Methodologies For Immigration Of Service Oriented Architecture Based Applications To Microservice Architecture - M Madhu Sudhan, P Indupriyankaray, Aelluri Lakshmi, M Sreenandan Reddy	314-317
57	Plant Leaf Disease Detection System Using Resnet-50 - Chappa.Ramya Sai,K.Kavya,K.Meghana,A.Tulasi	318-321
58	Predicting The Survival Of Patients With Heart Failure-Machine Learning Methods - Hemalatha Tatiparthi,G.Mounika,K.Prasanthi,G.Hemavani	322-329
59	Prediction Of Agriculture Yields Using Machine Learning Algorithms. - Katepalli Sai Sravanthi,Grandhisila Venkatanagalakshmipravallika,Kollipara Harika ,M. Mamatha	330-335
60	Prediction Of Covid 19 Epidemics Using Data Analytics - S.Anil Kumar,G.Sathar	336-343
61	Prediction Of Covid Readmissions Using Machine Learning - Athukuri Lakshmi Narendra Kumar,B.V.V.N.Sai Kumar	344-347
62	Rainfall Prediction Using Machine Learning - Anusha Bhavanam,Ch. Vyshnavi, Ch.Priyanka	348-353
63	Review On Load Balancing Using Cloud Computing - J Raghunath ,A Chandra Sekhar, Shaik Razia, D Venkatesh	354-362
64	Road Safety And Vehicle Accident Prevention - G.Gayatri,G.Gayatri,K.Sugunitha	363-367
65	Sensile Soil Analyzing Application - Mathi Raasi,G.Santhi Sri,M Sravya,Shaik Khaja Mohiddin Basha	368-373
66	Sentiment Analysis Of Movie Reviews Using Ml -Mukunda Gagula,Lakshma Reddy,Sai Venkatesh,Shaik Rafi	374-377
67	Supevised Learning Models for perception of Multi-Trafic Scene	378-383
68	Smart Parking System Using Web Application. - K Razeena Begum, S Anand, K Vivek, K Manideep	384-387

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69	Social Distance Monitoring Using Deep Learning - Satuluri Vijaya Lakshmi.K.K.N. Bhuvaneswari. B.Vijaya Lakshmi	388-398
70	Stock Value Prediction Using Regression - B.Jhansi Vazram. G.Venkatrao. D.Srtinivasa Reddy. V.Ashok Kumar	399-404
71	Summarized Reviews With Attention Mechanism Using Lstm - Tahfeem Shaik,Sirajuddin,Shaikrafi	405-408
72	Supervised Learning For Fraud And Malware Detection From Android Applications. - Tunuguntla Bala Bhaskar Rao ,Dronadula Narendra. Maddu Phanindra Kumar.Dr. S.V.N.Srinivasu	409-415
73	Trust-Based Privacy Preserving Photo Sharing In Online Social Networks - Mrs R.Padmaja,Sk.Shahnoor. N.Nikhila. L.Thanusha	416-419
74	Useableness And Applications Of Blockchain Technology In Cloud Computing Environment - D Venkatesh,M Vijaya Bhaskar. J Raghunath. D Raghava Raju	420-426
75	Weather Prediction - Kotha Tharun Teja,G.Ashok,K.Raviteja,N.Raviteja	427-431
76	Wholesale And Retail Store Management System - Mr K Siva Rama Krishna,Saranya Bala.Y ,Triveni.V , Sai Divya	432-435

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Heart Disease Prediction Using Machine Learning

M.Jhansi Lakshmi [1], R.V.P.S.Rekha [2], T.Divya [3]

Student, Dept. of Computer Science and Engineering

Narasaraopeta Engineering College, Narasaraopet

G.L.N.Jayaprada[4], M.Tech., Ph.D., Associate Professor, Dept. of CSE

Narasaraopeta Engineering College, Narasaraopet

manukondajhansilakshmi@gmail.com,rekha95379@gmail.com,tadidivya2000@gmail.com,gjayaprada74@gmail.com

Abstract-- **Heart or Cardiovascular Diseases (CVDs) have increased predominantly in past few years. It turned into most dangerous and life killing problem. This situation is present not only in India but also in whole world. There is requirement of good diagnose system which is accurate, feasible and reliable for treatment and curing disease. Machine Learning algorithms helps us in this by analysing various number of datasets across world which include analysing large and complex data. In recent times research shows various Machine Learning techniques are helpful to analyse medical issues and medical professionals in curing heart diseases. This project shows different models used for analysing. It also shows the accuracy of different techniques out of which best is chosen. Algorithms used are based on supervised learning algorithms such as Logistic Regression, K-Nearest Neighbour (KNN), Decision Trees (DT), Random Forest (RF).**

Keywords: **Decision Tree, Heart Disease Prediction, Naive Bayes, Random Forest, Logistic Regression.**

I. INTRODUCTION

Heart is an important organ of the human body and used to pump blood to every part of our body. If there is a small fail in hearts function it leads to stop working of various organs in body including brain and leads to person death. Causes of several heart related diseases is change in lifestyle, stress related to work switching to bad food habits.

Heart related diseases have increased as one of the most prominent cause of deaths all around the world. World Health Organisation reports that heart related diseases are responsible for the cause of 17.9 million deaths every year, 32% of whole worlds deaths. In India, heart related diseases have become the major cause of deaths. Heart diseases have killed 18.6 million people globally in 2019. Due to heart diseases there will be increase in spending on health and it reduces the individual productivity. From the reports made by the World Health Organisation (WHO), it tells that India have lost up to $237 billion, from 2005-2015, due to heart related or cardiovascular diseases. Thus, good diagnose system which is accurate, feasible and reliable for treatment and curing disease is very important.

Data from various Medical organisations, all around the world, is collected on various health related issues. These data can be analysed and exploited using various Machine Learning techniques to gain useful insights. But the data collected exits in raw format and massive, for many a times this data can be very noisy. So these datasets that are too overwhelming for human brains to analyse and comprehend, can be easily analysed and explored using various Machine Learning algorithms. Thus, these techniques have become very thoughtful, in recent times, to predict the presence or absence of heart related diseases accurately.

II. LITERATURE SURVEY

The dataset which used for the algorithms analysis is taken from the Kaggle website(https://www.kaggle.com), from an ongoing cardiovascular study of Framingham, Massachusetts. The main goal of this work is to predict whether a patient is prone to 10-year risk of future heart related diseases. The taken Framingham dataset consists with 4000 plus records of patients data and 16 attributes. The data analysis is done in Python programming by using JupyterLab.

K. Polaraju et al, [7] did study on Prediction of Heart Disease. He used Multiple Linear Regression Model and is proved that Multiple Linear Regression is correct for predicting the person is going to have heart disease or no chance. The study is done on 3000 records and 13 attributes by dividing it into training and test data set. 70% of data is used for training and remaining 30% of data is used for testing. By looking into the results it is clear to use Regression algorithm and is best when compared to others.

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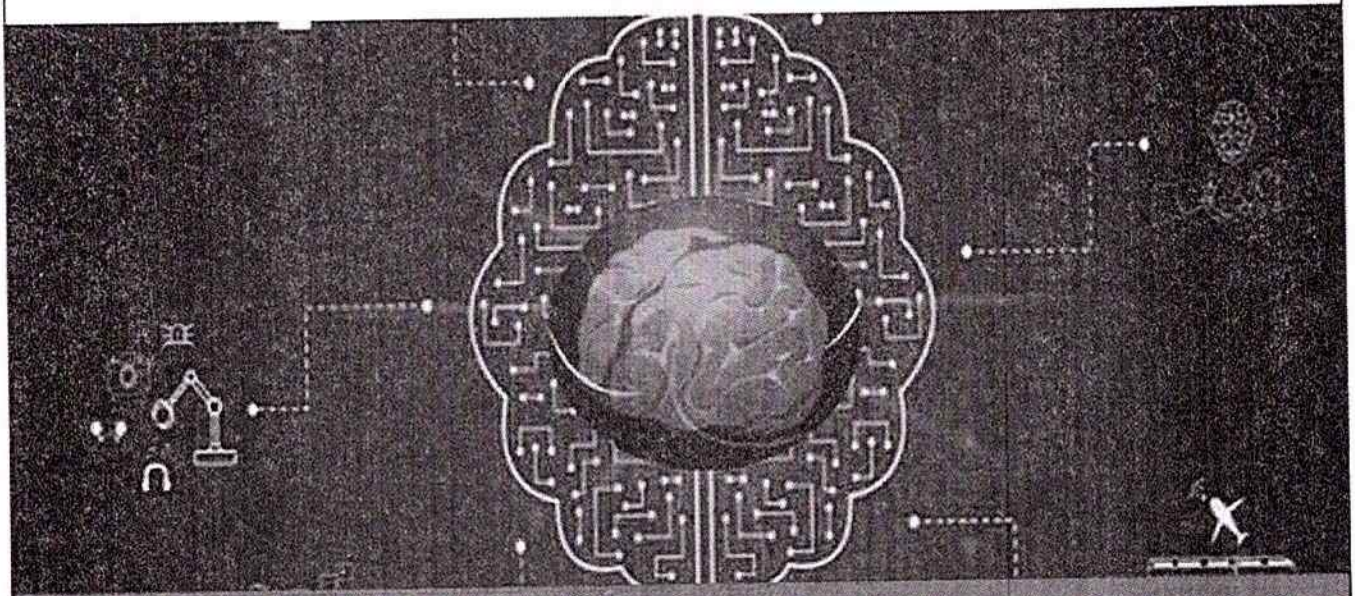

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7	Biometric Identification Scheme With Efficient Privacy-Preserving Mechanism For Cloud Computing Service. - Shaik Ruksana,Bandaru Naga Siva Saisuryatejaswi,Yadavalli Yedukondalu,M Mamatha	30-34
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15	Design And Experimental Study Of Automatic Colour Sorting By A Robotic Arm System - T.Lakshmibai	79-82
16	Detection Of Autism Disorder Based On Eeg Signal Using Deep Learning Methods -Ranjani M.P.Supraja	83-87
17	Detection Of Online Public Shaming With Offensive Content On Twitter. - Gutta Sai Durga,Gopu Sandhya,Jonnalagadda Madhavi, Dr. S.V.N.Srinivasu	88-91
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28	Face.Age And Gender Recogntion System Based on Deep Neural Networks - Gudapati Syam Prasad.K.Narendra Babu.N.Hemanth Kumar.K.Sriniivas	148-154
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39	Image Captioning Using Deep Learning - Y E V Pratap Kumar Kuchi.M.Sireesha. G. Sai Akhil. K. Hema Sai Mourya Gupta	214-219

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48	Mask R-Cnn For Fire Detection - Razeena Begum Shaik.S Yogananda Datta . M S V Manoj	271-276
49	Melanoma Prediction Using Deep Learning - Aishwarya Nallapati.D. Jaya Tejaswini, J. Prashanthi, T. Siri Chandana	277-280
50	Multilevel Hierarchy Based Privacy Preserved Profile Publishing In Cloud Environment. - Esthala Abhishek.Kambhampati Adinarayana.Battula Ramesh.G. Sambasiva Rao	281-286
51	Music Recommendation Application Based On Facial Expressions - Ms Mohammad Arsha Sultana.Abdul Saherabegum, Akhila Umma, Guthula Jayasri Sai Nikitha	287-290
52	Mutual Fund Prediction Using Machine Learning - Shaik Nannu Saidavali.N.Vinay Chandra Pal, K.Bhaskar Reddy	291-295
53	Network Coding Techniques To Store The Data Securely In Cloud. - Guru Brahmam Madala, Vijay Anand R	296-301
54	Network Spam And Fake User Detection In Online Social Networks Using Support Vector Machine. - Majeti Pavan Kalyan.Anchula Sreekanth.Ravi Mahesh Babu.G. Sambasiva Rao	302-307
55	Next Word Prediction Using Recurrent Neural Networks - Srikanth Kolisetty.B. Venkateswarlu, S. Siva Sai Kumar, T. Uday Kumar	308-313

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Principal
NARASARAOPETA ENGINEERING COLLEGE
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NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

56	Nobel Methodologies For Immigration Of Service Oriented Architecture Based Applications To Microservice Architecture - M Madhu Sudhan, P Indupriyankaray, Aelluri Lakshmi, M Sreenandan Reddy	314-317
57	Plant Leaf Disease Detection System Using Resnet-50 - Chappa.Ramya Sai,K.Kavya,K.Meghana,A.Tulasi	318-321
58	Predicting The Survival Of Patients With Heart Failure-Machine Learning Methods - Hemalatha Tatiparthi,G.Mounika,K.Prasanthi,G.Hemavani	322-329
59	Prediction Of Agriculture Yields Using Machine Learning Algorithms. - Katepalli Sai Sravanthi,Grandhisila Venkatanagalakshmipravallika,Kollipara Harika ,M. Mamatha	330-335
60	Prediction Of Covid 19 Epidemics Using Data Analytics - S.Anil Kumar,G.Sathar	336-343
61	Prediction Of Covid Readmissions Using Machine Learning - Athukuri Lakshmi Narendra Kumar,B.V.V.N.Sai Kumar	344-347
62	Rainfall Prediction Using Machine Learning - Anusha Bhavanam,Ch. Vyshnavi, Ch.Priyanka	348-353
63	Review On Load Balancing Using Cloud Computing - J Raghunath ,A Chandra Sekhar, Shaik Razia, D Venkatesh	354-362
64	Road Safety And Vehicle Accident Prevention - G.Gayatri,G.Gayatri,K.Sugunitha	363-367
65	Sensile Soil Analyzing Application - Mathi Raasi,G.Santhi Sri,M Sravya,Shaik Khaja Mohiddin Basha	368-373
66	Sentiment Analysis Of Movie Reviews Using Ml -Mukunda Gagula,Lakshma Reddy,Sai Venkatesh,Shaik Rafi	374-377
67	Supevised Learning Models for perception of Multi-Trafic Scene	378-383
68	Smart Parking System Using Web Application, - K Razeena Begum, S Anand, K Vivek, K Manideep	384-387

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69	Social Distance Monitoring Using Deep Learning - Satuluri Vijaya Lakshmi.K.K.N. Bhuvaneswari. B.Vijaya Lakshmi	388-398
70	Stock Value Prediction Using Regression - B.Jhansi Vazram. G.Venkatrao. D.Srtinivasa Reddy. V.Ashok Kumar	399-404
71	Summarized Reviews With Attention Mechanism Using Lstm - Tahfeem Shaik,Sirajuddin,Shaikrafi	405-408
72	Supervised Learning For Fraud And Malware Detection From Android Applications. - Tunuguntla Bala Bhaskar Rao .Dronadula Narendra. Maddu Phanindra Kumar.Dr. S.V.N.Srinivasu	409-415
73	Trust-Based Privacy Preserving Photo Sharing In Online Social Networks - Mrs R.Padmaja,Sk.Shahnoor. N.Nikhila. L.Thanusha	416-419
74	Useableness And Applications Of Blockchain Technology In Cloud Computing Environment - D Venkatesh.M Vijaya Bhaskar. J Raghunath. D Raghava Raju	420-426
75	Weather Prediction - Kotha Tharun Teja,G.Ashok.K.Raviteja.N.Raviteja	427-431
76	Wholesale And Retail Store Management System - Mr K Siva Rama Krishna.Saranya Bala.Y .Triveni.V . Sai Divya	432-435

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CSE 204

Children Speech Recognition using Machine Learning Methodologies

Dr.T.V.Sai Krishna
Professor, CSE
Narasaraopeta Engineering College
Narasaraopet, India
dr.saikrishna007@gmail.com

R Venkat
Research Scholar, CSE
Cambridge Institute of Technology
Affiliated to VTU-Belgaum, Bengaluru, India
rayalavenkat534@gmail.com

Abstract- Recognition of children's speech based on short-term spectral characteristics is a difficult challenge. One reason is that children's speech is highly fundamental, comparable to forming frequency values. In addition, their vocal apparatus undergoes modifications as youngsters grow up. This creates problems in the reliable removal of conventional short-term spectral characteristics for voice recognition. New acoustic modeling approaches evolved in recent years, that learn the function and television classification from the raw voice signal in an end-to-end way. Through research on PF-STAR corpus, we demonstrate that children's acoustic modeling approaches increase speech recognition.

Keywords--Children speech recognition, acoustic modeling, convolutional neural networks, end-to-end training.

I. INTRODUCTION

Automatic voice recognition (ASR) is the job of transcribing the voice signal linguistically. ASR systems have the objective of managing data variability from many resources such as the acoustic environment (ray, canal conditions), the speakers (speaker variability). the lexicon (out of words) and the style (impact on the articulation grade of continuous vs. isolated speech). Although the field of ASR has been highlighted, the acoustics and linguistic diversity of children's voices continue to be a challenge for children's speech recognition (as compared to adult speech). Speaking to children is more specifically characterized by the acoustic and linguistic features depending on the age, the variations in anatomy in vocal geometry. the capacity to regulate articulators and prosody and the breadth of language skills [1]. Acoustic investigations have shown that speech among youngsters is more basic, more formational and more spectral than adult language [1, 2.3]. During the feature extraction step in ASR systems, near fundamental frequency values (i.e. fundamental frequency) create problems. which deconstruct and conserve information based on the latter from the phoneme (i.e. formants).

Furthermore, the fact that children are showing higher variability in speech formant values results in more overlaps in children's phonemic classes compared with adults, which detériors children's performance of ASR[1, 2, 4]. The normalization of the Voice Length (VTLN), the normalization of the speakers and the adaptation to the model are used[1], while a genetic models are used in order to limit the acoustic area[6], in order to reduce the acoustic variability (thus, acoustic mismatch between children and adult acoustical spaces). On the linguistic side, recognition deterioration is related to the diversity in pronunciation in children [6], which tends to be erroneous pronunciations, words and ungrammatical sentences. The attention has been placed on pronunciation and language modelling in order to overcome linguistic diversity. A special dictionary based on the pronunciation of children is demonstrated in [6] to be useful in the detection of children's frequent pronunciation errors based on age, implying that possible gains in recognition performance may be achieved by correct modelling of pronunciation. The lack of a major, publicly available company to talk to children is another reason why children ASR are facing problems. The findings of state-of-the-art kids ASR systems are promising in huge quantities of data [7].

To overcome data shortages, [8] proposes an increase in the data in GMM-based and DNN-based acoustic models to transform children with ASR utilizing stochastic feature mapping (S FM). Our focus in this study is on children's ASR acoustic modelling. Standard short-term spectral feature extraction for language recognition generally involves a model of speech production with the objective of capturing

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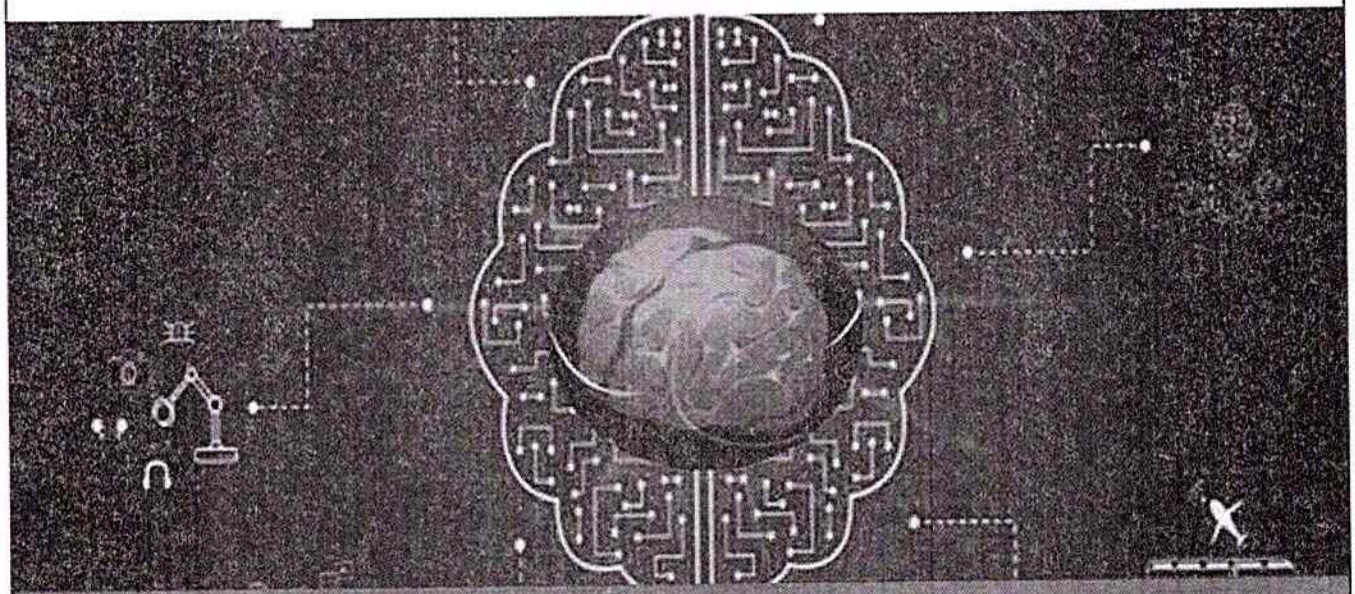

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-

REF. NO	TITLE OF THE PAPER AND AUTHOR(S)	Page No.
	Artificial Intelligence and Its Emerging Areas -NEC-ICAIIA 2K21	
1.	A Data Mining Based Model For Detection Of Deceitful Behaviour In Water Consumption - Tejasri Choudi,B.V.Satish, V.Naga Jyothi, K.Navya	1-5
2	A Machine Learning Framework For Prediction Of Heart Disease. Ramasetty Ramu,Kota Jagadeesh,Chanti Rajamohan Reddy,V. Mahesh Babu	6-10
3	A Supervised Learning Algorithm For Credit Card Fraud Detection. - Guggilam Sai Sri, Gummadilli Gouthami, Potluri Srividya, M. Mamatha	11-15
4	Amazon Product Review Sentiment Analysis Using Machine Learning - Ms Mohammad Arsha Sultana,P. Rakesh, M. Sandeep, G. Jagadeesh	16-20
5	An Interactive Study Of Thyroid Disease Prediction Using Machine Learning - D. Lokesh Gupta, D.Lokesh Gupta, K.V.Narasimha Reddy, D.Ramesh, V.Veerendra	21-25
6	Autoregressive Integrated Moving Average Model For Prediction Of Crypto Currency. - Pokuri Jaya Venkata Naga Sudhakar,Alladi Anil,Avula Venkata Rami Reddy,V. Mahesh Babu	26--29
7	Biometric Identification Scheme With Efficient Privacy-Preserving Mechanism For Cloud Computing Service. - Shaik Ruksana,Bandaru Naga Siva Saisuryatejaswi,Yadavalli Yedukondalu,M. Mamatha	30-34
8	Bitcoin Price Prediction -Mrs R.Padmaja,K.V.D Hanisha, B Amulya, M Harika	35-38
9	Calories Burned Prediction. - Niharika Motupalli, B.Siva Kanaka Raju Shaik Mehataj , U. Jhansi Rani, T .Bhavani	39-45
10	Cartoonize Image Using Deep Learning - Gouse Mastan Vali,D.Vamsi Krishna, A.Sairam,K.S.Lakshmi Narayana	46-54
11	Children Speech Recognition Using Machine Learning Methodologies - Dr.T.V.Sai Krishna, R Venkat	55-60

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Guntur (Dist.), A.P.

12	Clarification Of Webbing Through Cloud Computing Technologies - Amara.S.A.L.G.Gopala Gupta.Dr. Gudapati Syam Prasad	61-65
13	Convolutional Lstm Model For Sentiment Analysis On Social Big Data - Raghuveer Pachipulusu.V.Ananth Reddy. R.Sai Kiran. T.Vignesh	66-72
14	Data Preprocessing For Efficient Prediction In Customer Relationship Management. - Patur Ganga. K.Arun	73-78
15	Design And Experimental Study Of Automatic Colour Sorting By A Robotic Arm System - T.Lakshmibai	79-82
16	Detection Of Autism Disorder Based On Eeg Signal Using Deep Learning Methods -Ranjani M.P.Supraja	83-87
17	Detection Of Online Public Shaming With Offensive Content On Twitter. - Gutta Sai Durga.Gopu Sandhya.Jonnalagadda Madhavi. Dr. S.V.N.Srinivasu	88-91
18	Detection Of Phishing Attacks Using Natural Language Processing And Logistic Regression Model. - Surubula Thirupathi Rao.Pothukuchi Mahesh Babu.Rayala Venu.V. Mahesh Babu	92-98
19	Detection Of Social Network Mental Disorders Through Mining Of Online Social Media. - Battula Venkata Ananta Mehar Gopi.Rajarapu Venu Babu.Maddineni Naveen .Dr. S.V.N.Srinivasu	99-103
20	predections in healthy population through machine learning	104-108
21	Diabetics Prediction using Machine Learning Techniques. - Pathan Sajida. S.Amulya , V.Nandhini	109-114
22	DL-CNN Framework For Malicious Social Bots Detection. - Syed Fathima.Ponnapati Mallika.Gandru Akhilendra Chowdary.M. Mamatha	115-120
23	Door Security System Using Face Recognition -Dr A Srinivasa Rao.K.G.J.Prasanth. M. Rama Rao	121-123
24	ECG Classification With Convolutional Neural Networks - S V N Sreenivasu.T Bhargavika,B Anusha ,P Jayasri	124-129
25	Emotion Recognition From Multimodal Data(Speech. Video. Text) Based On Deep Learning Techniques - D.P.Supraja	130-137

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NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

26	Estimation Of Population Analysis - Tarun.G.Tarun.T.Purnavamsi.K.Vivekreddy	138-142
27	Eye Ball Cursor Movement Using Opencv - B.Preethi.D.Bharadwaja.B.Preethi. K.Charithra Lavanya.N.Sony	143-147
28	Face.Age And Gender Recogntion System Based on Deep Neural Networks - Gudapati Syam Prasad.K.Narendra Babu.N.Hemanth Kumar.K.Sriniivas	148-154
29	Facial Expression Recognition With Convolutional Neural Networks - S. Siva Nageswara Rao.S.Ramya. T.Anantha Lavanya	155-162
30	Fake Currency Detection. - Mr.Sk.K.M.Basha , Yalagala Hema Latha. Gatakala Venkata Sravya Bhavani. Macharla Maitili	163-167
31	Fake News Detection - Gangasani Likitha. I. Navya Sri. D. Swetha	168-175
32	Fake News Detection Using Machine Learning - Srikanth Mylapalli.Mylapalli Ramesh	176-180
33	Forest Fires Detection Using Machine Learning Algorithms - N.S.Sesi Kiran.P. Lakshmi Narayana. Sk. Mastanvali. P. Nivas	181-185
34	Functioning Of Artificial Intelligence In An Self-Driving Vehicle - A Review -Penugonda Surya Teja.None	186-189
35	Generic Recommendation Engine Using Hybrid Filtering Model - G Prabhakara Reddy.O Ramesh. Ch Anil	190-200
36	Head Motion Detection - Dr A Srinivasa Rao.M.Prathyusha. Y.Rajeswari	201-203
37	Heart Disease Prediction Using Machine Learning - Jhansi Lakshmi Manukonda .R. V. P. S. Rekha. T. Divya. G. L. N. Jayaprada	204-208
38	House Price Prediction - Bodlapati Sowmya Reddy.M. Yamini Priya. P. Manasa	209-213
39	Image Captioning Using Deep Learning - Y E V Pratap Kumar Kuchi.M.Sireesha. G. Sai Akhil. K. Hema Sai Mourya Gupta	214-219

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Principal
NARASARAOPETA ENGINEERING COLLEGE
(AUTONOMOUS)
NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

40	Image Classification Using Object Detection With YOLO Algorithm. Shaik Bhadhar Shareef.Putchakayala Ramesh.Angajala Anil.G. Sambasiva Rao	220-223
41	Implementation Of Video Steganography Cryptography System For Iot-Based Cloud Computing Security. - Samvarapu Sagar Reddy.Mallavarapu Nikhil.Chevala Venkatesh.Dr. S.V.N.Srinivasu	224-228
42	Inform Me-Family Gps Locator - Oruganti Ramesh.G Prabhakara Reddy. Ch. Anil	229-233
43	Ipl Score Prediction Using Machine Learning Methods - Rajyalakshmi Dondapati.N.Likitha.M.Anmisha	234-241
44	Liver Disease Prediction Using Machine Learning Methods - Sravana Sandhya Rani Karnati.K. Sravana Sandhya Rani, B.V.Gayithri.K.Vijayalakshmi	242-249
45	Loan Prediction System - Divya Gopavarapu.K.Manasa.A.Akhila.M.Sireesha	250-255
46	Lung Cancer Prediction - Naga Mallika Gude,M. Navya Sri, B. Sukanya	256-263
47	Map Reduced Segmentation Clustering For Big Data Analytics Using Extended K-Mean Clustering Technique - Mvs.Prasad	264-270
48	Mask R-Cnn For Fire Detection - Razeena Begum Shaik.S Yogananda Datta . M S V Manoj	271-276
49	Melanoma Prediction Using Deep Learning - Aishwarya Nallapati.D. Jaya Tejaswini, J. Prashanthi, T. Siri Chandana	277-280
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52	Mutual Fund Prediction Using Machine Learning - Shaik Nannu Saidavali.N.Vinay Chandra Pal, K.Bhaskar Reddy	291-295
53	Network Coding Techniques To Store The Data Securely In Cloud. - Guru Brahmam Madala, Vijay Anand R	296-301
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57	Plant Leaf Disease Detection System Using Resnet-50 - Chappa.Ramya Sai,K.Kavya,K.Meghana,A.Tulasi	318-321
58	Predicting The Survival Of Patients With Heart Failure-Machine Learning Methods - Hemalatha Tatiparthi,G.Mounika,K.Prasanthi,G.Hemavani	322-329
59	Prediction Of Agriculture Yields Using Machine Learning Algorithms. - Katepalli Sai Sravanthi,Grandhisila Venkatanagalakshmipravallika,Kollipara Harika ,M. Mamatha	330-335
60	Prediction Of Covid 19 Epidemics Using Data Analytics - S.Anil Kumar,G.Sathar	336-343
61	Prediction Of Covid Readmissions Using Machine Learning - Athukuri Lakshmi Narendra Kumar,B.V.V.N.Sai Kumar	344-347
62	Rainfall Prediction Using Machine Learning - Anusha Bhavanam,Ch. Vyshnavi, Ch.Priyanka	348-353
63	Review On Load Balancing Using Cloud Computing - J Raghunath ,A Chandra Sekhar, Shaik Razia, D Venkatesh	354-362
64	Road Safety And Vehicle Accident Prevention - G.Gayatri,G.Gayatri,K.Sugunitha	363-367
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71	Summarized Reviews With Attention Mechanism Using Lstm - Tahfeem Shaik,Sirajuddin,Shaikrafi	405-408
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CSE 202

An interactive study of thyroid disease prediction using machine learning algorithms

D. Lokesh Gupta[a], K. V. Narasimha Reddy[b],D.Ramesh[c], V. Veerendra[d]
Department of CSE. Narasaraopet Engineering College. Narasaraopet, A.P, India
[a] lokeshguptadoredla@gmail.com
[b] balaramesh0510@gmail.com
[c] veerendrachowdary3697@gmail.com
Asst. Prof, Department of CSE, Narasaraopet Engineering College, Narasaraopet, A.P, India
[b] narasimhareddynec03@gmail.com

***Abstract*-- Thyroidillness is a medicinal state that influences the functionality of the thyroid organ that is thyroid gland. The indications of thyroid illness differ basing upon the type. There are two most common varieties: hypothyroidism (low capacity) which is caused due to the insufficiency of the thyroid hormones, hyperthyroidism (high capacity) which is caused due to the existence of the thyroid hormones more than just sufficient. These diseases giving many side effects such as weight gain, weight loss, stress and so on to our human body. If this disease is detected in earlier stage, then physician can give proper treatment to the patients. It is additionally conceivable to have irregular thyroid capacity tests with no clinical side effects. In this study a comparative thyroid disease diagnosis were performed by using Machine learning techniques that is Support Vector Machine (SVM), Random Forest, KNN, Naïve Bayes, Decision Trees. For this purpose, thyroid disease dataset gathered from the UCI machine learning database was used.**

***Keywords*— Machine learning, Classification, SVM, Random Forest, KNN, NaiveBayes, DecisionTree.**

I. INTRODUCTION

Machine learning is one of the applications of artificial intelligence (AI) that provides computers, the ability to learn automatically and improve from experience instead of explicitly programmed. It focuses on developing computer programs that can access data and use it to learn from themselves. The main aim is to allow computers to learn automatically without human intervention and adjust actions accordingly. Thyroid disease has a great deal of attention in medical research. The diagnosis of thyroid disease is a challenging task, which can offer automated prediction about the thyroid condition of patient so that further treatment can be made effective.

Classification algorithms are very important category of supervised machine learning algorithms. These algorithms require a very large training set. These training data sets are consisting of many features or attributes which describe the individual sample. Since we are doing supervised learning algorithm. All the training set are labelled correctly. The classification algorithms such as decision trees, Gaussian Naive Bayes, Random Forest, K-nearest Neighbours, K-Means and support vector machines (SVM), develop model with these data with many different parameters. When we have a new unlabelled sample, we can use the model to predict the label of the new sample. These techniques are used for disease diagnosis to help doctor to effectively label the new case.

In the recent years atleast a person out of twenty is suffering from thyroid disease in India. The disorder of thyroid disease mostly happens in the women having the age of 18-56. The extreme stage of thyroid results in cardiovascular complications, increase in blood pressure, increases in cholesterol level, depression and decreased fertility.

Thyroid issues are impact on the thyroid organ, it is a butterfly shaped organ within the front of the neck. The main functions of the thyroid hormones are to regulate the growth rate of metabolism. To control the metabolism in the body, thyroid hormones are useful in many ways, counting how briskly the heart beats and how quickly the calories are burnt. The composition of thyroid hormones by the thyroid gland helps in the domination of the body's metabolism. The thyroid releases two principal hormones. The first is called thyroxine (T4) and the other one is triiodothyronine (T3) into the blood stream. To regulate the temperature of the body these hormones are imperative in the fabrication and also in the comprehensive construction and supervision. Specifically, thyroxin (T4) and triiodothyronine (T3) are the two types of active hormones that are customarily composed by the thyroid glands. These hormones are decisive in protein management, dissemination in the body temperature, along with the energy-bearing and transmission in every part of the body. For these two thyroid hormones i.e. (T3 and T4), iodine is considered as the main building chunk of the thyroid glands and are prostrated in a few specific problems, some of which are

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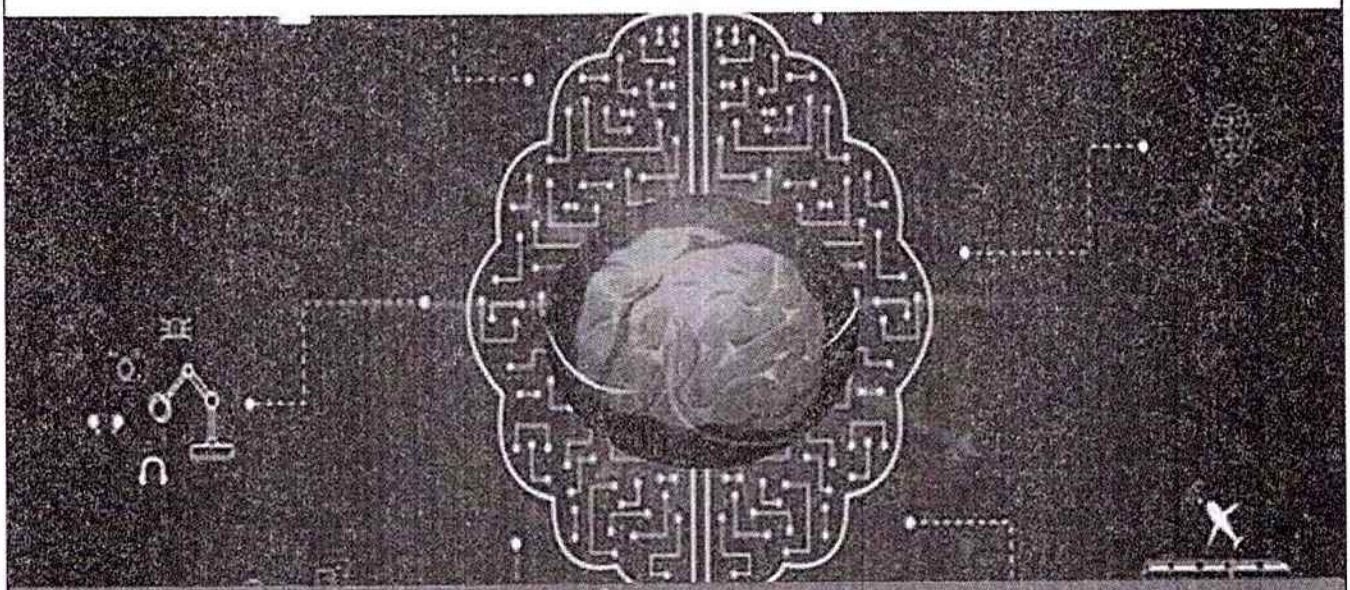

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REF. NO	TITLE OF THE PAPER AND AUTHOR(S)	Page No.
	Artificial Intelligence and Its Emerging Areas -NEC-ICAIIA 2K21	
1.	A Data Mining Based Model For Detection Of Deceitful Behaviour In Water Consumption - Tejasri Choudi,B.V.Satish, V.Naga Jyothi, K.Navya	1-5
2	A Machine Learning Framework For Prediction Of Heart Disease. Ramasetty Ramu,Kota Jagadeesh,Chanti Rajamohan Reddy,V. Mahesh Babu	6-10
3	A Supervised Learning Algorithm For Credit Card Fraud Detection. - Guggilam Sai Sri, Gummadilli Gouthami, Potluri Srividya, M. Mamatha	11-15
4	Amazon Product Review Sentiment Analysis Using Machine Learning - Ms Mohammad Arsha Sultana,P. Rakesh, M. Sandeep, G. Jagadeesh	16-20
5	An Interactive Study Of Thyroid Disease Prediction Using Machine Learning - D. Lokesh Gupta, D.Lokesh Gupta, K.V.Narasimha Reddy, D.Ramesh, V.Veerendra	21-25
6	Autoregressive Integrated Moving Average Model For Prediction Of Crypto Currency. - Pokuri Jaya Venkata Naga Sudhakar,Alladi Anil,Avula Venkata Rami Reddy,V. Mahesh Babu	26--29
7	Biometric Identification Scheme With Efficient Privacy-Preserving Mechanism For Cloud Computing Service. - Shaik Ruksana,Bandaru Naga Siva Satsuryatejaswi,Yadavalli Yedukondalu,M Mamatha	30-34
8	Bitcoin Price Prediction -Mrs R.Padmaja,K.V.D Hanisha, B Amulya, M Harika	35-38
9	Calories Burned Prediction. - Niharika Motupalli, B.Siva Kanaka Raju Shaik Mehataj , U. Jhansi Rani, T .Bhavani	39-45
10	Cartoonize Image Using Deep Learning - Gouse Mastan Vali,D.Vamsi Krishna, A.Sairam,K.S.Lakshmi Narayana	46-54
11	Children Speech Recognition Using Machine Learning Methodologies - Dr.T.V.Sai Krishna, R Venkat	55-60

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Principal
NARASARAOPETA ENGINEERING COLLEGE
(AUTONOMOUS)
NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

12	Clarification Of Webbing Through Cloud Computing Technologies - Amara.S.A.L.G.Gopala Gupta.Dr. Gudapati Syam Prasad	61-65
13	Convolutional Lstm Model For Sentiment Analysis On Social Big Data - Raghuveer Pachipulusu,V.Ananth Reddy. R.Sai Kiran. T.Vignesh	66-72
14	Data Preprocessing For Efficient Prediction In Customer Relationship Management. - Patur Ganga. K.Arun	73-78
15	Design And Experimental Study Of Automatic Colour Sorting By A Robotic Arm System - T.Lakshmibai	79-82
16	Detection Of Autism Disorder Based On Eeg Signal Using Deep Learning Methods -Ranjani M.P.Supraja	83-87
17	Detection Of Online Public Shaming With Offensive Content On Twitter. - Gutta Sai Durga.Gopu Sandhya.Jonnalagadda Madhavi. Dr. S.V.N.Srinivasu	88-91
18	Detection Of Phishing Attacks Using Natural Language Processing And Logistic Regression Model. - Surubula Thirupathi Rao.Pothukuchi Mahesh Babu.Rayala Venu.V. Mahesh Babu	92-98
19	Detection Of Social Network Mental Disorders Through Mining Of Online Social Media. - Battula Venkata Ananta Mehar Gopi.Rajarapu Venu Babu.Maddineni Naveen .Dr. S.V.N.Srinivasu	99-103
20	predections in healthy population through machine learning	104-108
21	Diabetics Prediction using Machine Learning Techniques. - Pathan Sajida. S.Amulya . V.Nandhini	109-114
22	DL-CNN Framework For Malicious Social Bots Detection. - Syed Fathima.Ponnapati Mallika.Gandru Akhilendra Chowdary.M. Mamatha	115-120
23	Door Security System Using Face Recognition -Dr A Srinivasa Rao.K.G.J.Prasanth. M. Rama Rao	121-123
24	ECG Classification With Convolutional Neural Networks - S V N Sreenivasu.T Bhargavika.B Anusha .P Jayasri	124-129
25	Emotion Recognition From Multimodal Data(Speech. Video. Text) Based On Deep Learning Techniques - M.P.Supraja	130-137

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Principal
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NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

26	Estimation Of Population Analysis - Tarun.G.Tarun.T.Purnavamsi.K.Vivekreddy	138-142
27	Eye Ball Cursor Movement Using Opencv - B.Preethi.D.Bharadwaja.B.Preethi. K.Charithra Lavanya.N.Sony	143-147
28	Face.Age And Gender Recogntion System Based on Deep Neural Networks - Gudapati Syam Prasad.K.Narendra Babu.N.Hemanth Kumar.K.Sriniivas	148-154
29	Facial Expression Recognition With Convolutional Neural Networks - S. Siva Nageswara Rao.S.Ramya. T.Anantha Lavanya	155-162
30	Fake Currency Detection. - Mr.Sk.K.M.Basha , Yalagala Hema Latha. Gatakala Venkata Sravya Bhavani. Macharla Maitili	163-167
31	Fake News Detection - Gangasani Likitha. I. Navya Sri. D. Swetha	168-175
32	Fake News Detection Using Machine Learning - Srikanth Mylapalli.Mylapalli Ramesh	176-180
33	Forest Fires Detection Using Machine Learning Algorithms - N.S.Sesi Kiran.P. Lakshmi Narayana. Sk. Mastanvali. P. Nivas	181-185
34	Functioning Of Artificial Intelligence In An Self-Driving Vehicle - A Review -Penugonda Surya Teja.None	186-189
35	Generic Recommendation Engine Using Hybrid Filtering Model - G Prabhakara Reddy,O Ramesh. Ch Anil	190-200
36	Head Motion Detection - Dr A Srinivasa Rao.M.Prathyusha. Y.Rajeswari	201-203
37	Heart Disease Prediction Using Machine Learning - Jhansi Lakshmi Manukonda ,R. V. P. S. Rekha. T. Divya. G. L. N. Jayaprada	204-208
38	House Price Prediction - Bodlapati Sowmya Reddy.M. Yamini Priya. P. Manasa	209-213
39	Image Captioning Using Deep Learning - Y E V Pratap Kumar Kuchi.M.Sireesha. G. Sai Akhil. K. Hema Sai Mourya Gupta	214-219

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NARASARAOPETA ENGINEERING COLLEGE
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NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

40	Image Classification Using Object Detection With YOLO Algorithm. Shaik Bhadhar Shareef.Putchakayala Ramesh.Angajala Anil.G. Sambasiva Rao	220-223
41	Implementation Of Video Steganography Cryptography System For Iot-Based Cloud Computing Security. - Sanivarapu Sagar Reddy.Mallavarapu Nikhil.Chevala Venkatesh.Dr. S.V.N Srinivasu	224-228
42	Inform Me-Family Gps Locator - Oruganti Ramesh.G Prabhakara Reddy. Ch. Anil	229-233
43	Ipl Score Prediction Using Machine Learning Methods - Rajyalakshmi Dondapati.N.Likitha.M.Anmisha	234-241
44	Liver Disease Prediction Using Machine Learning Methods - Sravana Sandhya Rani Karnati.K. Sravana Sandhya Rani, B.V.Gayithri,K.Vijayalakshmi	242-249
45	Loan Prediction System - Divya Gopavarapu.K.Manasa.A.Akhila.M.Sireesha	250-255
46	Lung Cancer Prediction - Naga Mallika Gude.M. Navya Sri. B. Sukanya	256-263
47	Map Reduced Segmentation Clustering For Big Data Analytics Using Extended K-Mean Clustering Technique - Mvs.Prasad	264-270
48	Mask R-Cnn For Fire Detection - Razeena Begum Shaik.S Yogananda Datta . M S V Manoj	271-276
49	Melanoma Prediction Using Deep Learning - Aishwarya Nallapati.D. Jaya Tejaswini. J. Prashanthi, T. Siri Chandana	277-280
50	Multilevel Hierarchy Based Privacy Preserved Profile Publishing In Cloud Environment. - Esthala Abhishek.Kambhampati Adinarayana.Battula Ramesh.G. Sambasiva Rao	281-286
51	Music Recommendation Application Based On Facial Expressions - Ms Mohammad Arsha Sultana.Abdul Saherabegum, Akhila Umma, Guthula Jayasri Sai Nikitha	287-290
52	Mutual Fund Prediction Using Machine Learning - Shaik Nannu Saidavali.N.Vinay Chandra Pal, K.Bhaskar Reddy	291-295
53	Network Coding Techniques To Store The Data Securely In Cloud. - Guru Brahmam Madala, Vijay Anand R	296-301
54	Network Spam And Fake User Detection In Online Social Networks Using Support Vector Machine. - Majeti Pavan Kalyan.Anchula Sreekanth.Ravi Mahesh Babu.G. Sambasiva Rao	302-307
55	Next Word Prediction Using Recurrent Neural Networks - Srikanth Kolisetty.B. Venkateswarlu, S. Siva Sai Kumar, T. Uday Kumar	308-313

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56	Nobel Methodologies For Immigration Of Service Oriented Architecture Based Applications To Microservice Architecture - M Madhu Sudhan, P Indupriyankaray, Aelluri Lakshmi, M Sreenandan Reddy	314-317
57	Plant Leaf Disease Detection System Using Resnet-50 - Chappa.Ramya Sai,K.Kavya,K.Meghana,A.Tulasi	318-321
58	Predicting The Survival Of Patients With Heart Failure-Machine Learning Methods - Hemalatha Tatiparthi,G.Mounika,K.Prasanthi,G.Hemavani	322-329
59	Prediction Of Agriculture Yields Using Machine Learning Algorithms. - Katepalli Sai Sravanthi,Grandhisila Venkatanagalakshmipravallika,Kollipara Harika ,M. Mamatha	330-335
60	Prediction Of Covid 19 Epidemics Using Data Analytics - S.Anil Kumar,G.Sathar	336-343
61	Prediction Of Covid Readmissions Using Machine Learning - Athukuri Lakshmi Narendra Kumar,B.V.V.N.Sai Kumar	344-347
62	Rainfall Prediction Using Machine Learning - Anusha Bhavanam,Ch. Vyshnavi, Ch.Priyanka	348-353
63	Review On Load Balancing Using Cloud Computing - J Raghunath ,A Chandra Sekhar, Shaik Razia, D Venkatesh	354-362
64	Road Safety And Vehicle Accident Prevention - G.Gayatri,G.Gayatri,K.Sugunitha	363-367
65	Sensile Soil Analyzing Application - Mathi Raasi,G.Santhi Sri,M Sravya,Shaik Khaja Mohiddin Basha	368-373
66	Sentiment Analysis Of Movie Reviews Using Ml -Mukunda Gagula,Lakshma Reddy,Sai Venkatesh,Shaik Rafi	374-377
67	Supevised Learning Models for perception of Multi-Trafic Scene	378-383
68	Smart Parking System Using Web Application. - K Razeena Begum, S Anand, K Vivek, K Manideep	384-387

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NARASARAOPETA ENGINEERING COLLEGE
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NARASARAOPET - 522 601.
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69	Social Distance Monitoring Using Deep Learning - Satuluri Vijaya Lakshmi.K.K.N. Bhuvaneswari. B.Vijaya Lakshmi	388-398
70	Stock Value Prediction Using Regression - B.Jhansi Vazram. G.Venkatrao. D.Srtinivasa Reddy. V.Ashok Kumar	399-404
71	Summarized Reviews With Attention Mechanism Using Lstm - Tahfeem Shaik,Sirajuddin,Shaikrafi	405-408
72	Supervised Learning For Fraud And Malware Detection From Android Applications. - Tunuguntla Bala Bhaskar Rao ,Dronadula Narendra. Maddu Phanindra Kumar.Dr. S.V.N.Srinivasu	409-415
73	Trust-Based Privacy Preserving Photo Sharing In Online Social Networks - Mrs R.Padmaja,Sk.Shahnoor. N.Nikhila. L.Thanusha	416-419
74	Useableness And Applications Of Blockchain Technology In Cloud Computing Environment - D Venkatesh,M Vijaya Bhaskar. J Raghunath. D Raghava Raju	420-426
75	Weather Prediction - Kotha Tharun Teja,G.Ashok.K.Raviteja,N.Raviteja	427-431
76	Wholesale And Retail Store Management System - Mr K Siva Rama Krishna.Saranya Bala.Y ,Triveni.V , Sai Divya	432-435

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A Machine Learning Framework for Prediction of Heart Disease

RAMASETTY RAMU[1], KOTA JAGADEESH[2], CHANTI RAJAMOHAN REDDY[3], V. MAHESH BABU[4]
[1]ramuramisetty08@gmail.com, [2]kota.jagadessh1997@gmail.com,
[3]rajamohanreddychanti5@gmail.com, [4]mailformrx@gmail.com
[1,2,3]student,Department of MCA, Narasaraopeta Engineering College, [4]Associate Professor,Department of MCA, Narasaraopeta Engineering College

ABSTRACT

Present days one of the major application areas of machine learning algorithms is medical diagnosis of diseases and treatment. Machine learning algorithms also used to find correlations and associations between different diseases. Nowadays many people are dying because of sudden heart attack .Prediction and diagnosing of heart disease becomes a challenging factor faced by doctors and hospitals both in India and abroad. To reduce number of deaths because of heart diseases, we must predict whether person is at the risk of heart disease or not in advance. Data mining techniques and machine learning algorithms play an especially important role in this area. Many researchers are carrying out their research in this area to develop software that can help doctors to take decision regarding both prediction and diagnosing of heart disease. In this paper we focused on how data mining techniques can be used to predict heart disease in advance such that patient is well treated. We used different algorithms for comparative analysis, but random forest algorithm has shown highest accuracy in prediction. We used Random forest machine learning algorithms supported by SVM to predict heart disease in advance. Dataset contains 303 samples and 14 input features as well as 1 output feature. The dataset is available in UCI Machine Learning Repository; we used 65% data for training and 35% data for testing. The algorithm has shown 0.763 precision and 0.935 recall in predicting negative class tupples.

Keywords: Classification, Heart disease machine learning, C4.5, J48 algorithm, Random Forest algorithm.

I. INTRODUCTION

Healthcare industry today generates large amounts of complex data about patients, hospitals resources, disease diagnosis, electronic patient records, medical devices etc [1]. The large amounts of data are a key resource to be processed and analyzed for knowledge extraction that enables support for cost-savings and decision making. As per world health organization (WHO) latest statistics the highest mortality rate of people, both in India and as well as in abroad is due to heart disease. So, it is vital time to check this death toll by correctly identifying the disease in initial stage. It is really a headache for all doctors both in India and abroad. Now a day's doctors are adopting many scientific technologies and methodology for both identification and diagnosing not only common disease, but also many fatal diseases. The successful treatment is always attributed by right and accurate diagnosis. Doctors may sometimes fail to take accurate decisions while diagnosing the heart disease of a patient, therefore heart disease prediction systems which use machine learning algorithms assist in such cases to get accurate results [2]. In this article, we especially focused on important attributes like, high blood pressure, abnormal blood lipids, use of tobacco, obesity, physical inactivity, diabetes, age, gender, family generation, etc to predict whether person is suffering with heart disease or not. Many heart strokes are happening because of accumulation of cholesterol in blood vessels or blood clot in blood vessels in arteries which supply blood to the heart muscles [3]. Internal and external view of heart is as shown in figure1, figure 2 given below.

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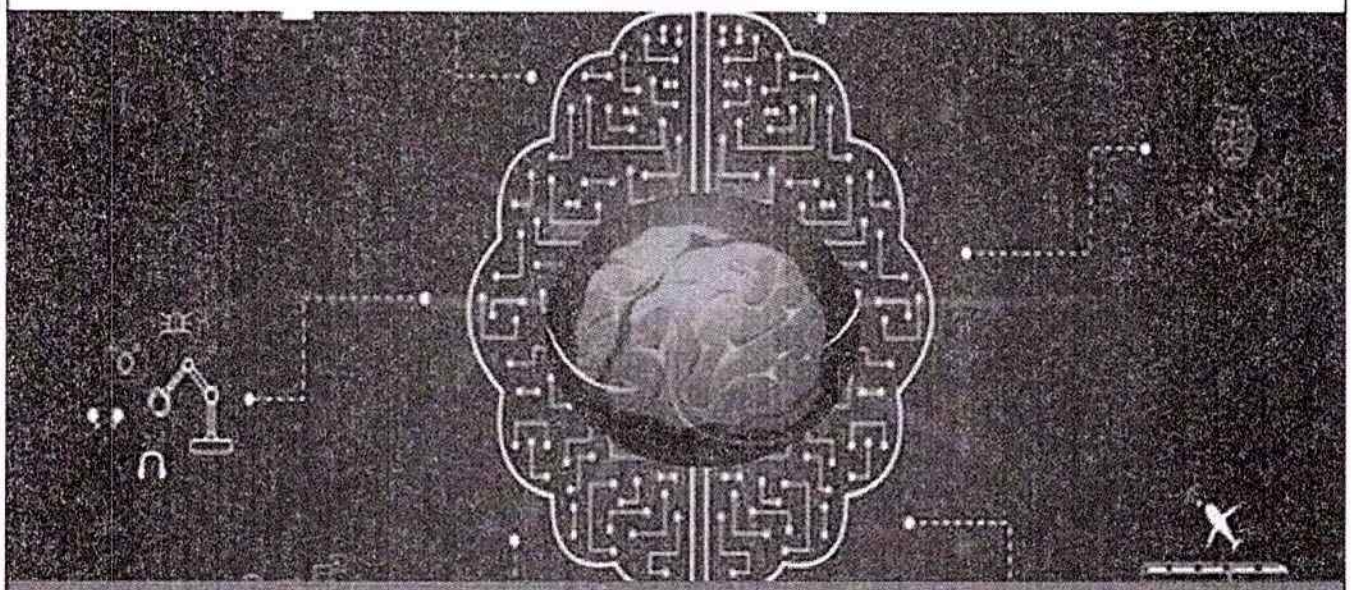

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-

REF. NO	TITLE OF THE PAPER AND AUTHOR(S)	Page No.
	Artificial Intelligence and Its Emerging Areas -NEC-ICAIIA 2K21	
1.	A Data Mining Based Model For Detection Of Deceitful Behaviour In Water Consumption - Tejasri Choudi,B.V.Satish, V.Naga Jyothi, K.Navya	1-5
2	A Machine Learning Framework For Prediction Of Heart Disease, Ramasetty Ramu,Kota Jagadeesh,Chanti Rajamohan Reddy,V. Mahesh Babu	6-10
3	A Supervised Learning Algorithm For Credit Card Fraud Detection, - Guggilam Sai Sri, Gummadilli Gouthami, Potluri Srividya, M. Mamatha	11-15
4	Amazon Product Review Sentiment Analysis Using Machine Learning - Ms Mohammad Arsha Sultana,P. Rakesh, M. Sandeep, G. Jagadeesh	16-20
5	An Interactive Study Of Thyroid Disease Prediction Using Machine Learning - D. Lokesh Gupta, D.Lokesh Gupta, K.V.Narasimha Reddy, D.Ramesh, V.Veerendra	21-25
6	Autoregressive Integrated Moving Average Model For Prediction Of Crypto Currency, - Pokuri Jaya Venkata Naga Sudhakar,Alladi Anil,Avula Venkata Rami Reddy,V. Mahesh Babu	26--29
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8	Bitcoin Price Prediction -Mrs R.Padmaja,K.V.D Hanisha, B Amulya, M Harika	35-38
9	Calories Burned Prediction, - Niharika Motupalli, B.Siva Kanaka Raju Shaik Mehataj , U. Jhansi Rani, T .Bhavani	39-45
10	Cartoonize Image Using Deep Learning - Gouse Mastan Vali,D.Vamsi Krishna, A.Sairam,K.S.Lakshmi Narayana	46-54
11	Children Speech Recognition Using Machine Learning Methodologies - Dr.T.V.Sai Krishna, R Venkat	55-60

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12	Clarification Of Webbing Through Cloud Computing Technologies - Amara.S.A.L.G.Gopala Gupta.Dr. Gudapati Syam Prasad	61-65
13	Convolutional Lstm Model For Sentiment Analysis On Social Big Data - Raghuveer Pachipulusu.V.Ananth Reddy. R.Sai Kiran. T.Vignesh	66-72
14	Data Preprocessing For Efficient Prediction In Customer Relationship Management. - Patur Ganga. K.Arun	73-78
15	Design And Experimental Study Of Automatic Colour Sorting By A Robotic Arm System - T.Lakshmibai	79-82
16	Detection Of Autism Disorder Based On Eeg Signal Using Deep Learning Methods -Ranjani M.P.Supraja	83-87
17	Detection Of Online Public Shaming With Offensive Content On Twitter. - Gutta Sai Durga.Gopu Sandhya.Jonnalagadda Madhavi. Dr. S.V.N.Srinivasu	88-91
18	Detection Of Phishing Attacks Using Natural Language Processing And Logistic Regression Model. - Surubula Thirupathi Rao.Pothukuchi Mahesh Babu.Rayala Venu.V. Mahesh Babu	92-98
19	Detection Of Social Network Mental Disorders Through Mining Of Online Social Media. - Battula Venkata Ananta Mehar Gopi.Rajarapu Venu Babu.Maddineni Naveen .Dr. S.V.N.Srinivasu	99-103
20	predections in healthy population through machine learning	104-108
21	Diabetics Prediction using Machine Learning Techniques. - Pathan Sajida. S.Amulya . V.Nandhini	109-114
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24	ECG Classification With Convolutional Neural Networks - S V N Sreenivasu.T Bhargavika.B Anusha .P Jayasri	124-129
25	Emotion Recognition From Multimodal Data(Speech. Video. Text) Based On Deep Learning Techniques D.P.Supraja	130-137

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26	Estimation Of Population Analysis - Tarun.G.Tarun.T.Purnavamsi.K.Vivekreddy	138-142
27	Eye Ball Cursor Movement Using Opencv - B.Preethi.D.Bharadwaja.B.Preethi. K.Charithra Lavanya.N.Sony	143-147
28	Face.Age And Gender Recogntion System Based on Deep Neural Networks - Gudapati Syam Prasad.K.Narendra Babu.N.Hemanth Kumar.K.Sriniivas	148-154
29	Facial Expression Recognition With Convolutional Neural Networks - S. Siva Nageswara Rao.S.Ramya. T.Anantha Lavanya	155-162
30	Fake Currency Detection. - Mr.Sk.K.M.Basha , Yalagala Hema Latha. Gatakala Venkata Sravya Bhavani. Macharla Maitili	163-167
31	Fake News Detection - Gangasani Likitha. I. Navya Sri. D. Swetha	168-175
32	Fake News Detection Using Machine Learning - Srikanth Mylapalli.Mylapalli Ramesh	176-180
33	Forest Fires Detection Using Machine Learning Algorithms - N.S.Sesi Kiran.P. Lakshmi Narayana. Sk. Mastanvali. P. Nivas	181-185
34	Functioning Of Artificial Intelligence In An Self-Driving Vehicle - A Review -Penugonda Surya Teja.None	186-189
35	Generic Recommendation Engine Using Hybrid Filtering Model - G Prabhakara Reddy,O Ramesh. Ch Anil	190-200
36	Head Motion Detection - Dr A Srinivasa Rao.M.Prathyusha. Y.Rajeswari	201-203
37	Heart Disease Prediction Using Machine Learning - Jhansi Lakshmi Manukonda .R. V. P. S. Rekha. T. Divya. G. L. N. Jayaprada	204-208
38	House Price Prediction - Bodlapati Sowmya Reddy.M. Yamini Priya. P. Manasa	209-213
39	Image Captioning Using Deep Learning - Y E V Pratap Kumar Kuchi.M.Sireesha. G. Sai Akhil. K. Hema Sai Mourya Gupta	214-219

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40	Image Classification Using Object Detection With YOLO Algorithm. Shaik Bhadhar Shareef.Putchakayala Ramesh.Angajala Anil.G. Sambasiva Rao	220-223
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42	Inform Me-Family Gps Locator - Oruganti Ramesh.G Prabhakara Reddy. Ch. Anil	229-233
43	Ipl Score Prediction Using Machine Learning Methods - Rajyalakshmi Dondapati.N.Likitha.M.Anmisha	234-241
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54	Network Spam And Fake User Detection In Online Social Networks Using Support Vector Machine. - Majeti Pavan Kalyan.Anchula Sreekanth.Ravi Mahesh Babu.G. Sambasiva Rao	302-307
55	Next Word Prediction Using Recurrent Neural Networks - Srikanth Kolisetty.B. Venkateswarlu. S. Siva Sai Kumar, T. Uday Kumar	308-313

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57	Plant Leaf Disease Detection System Using Resnet-50 - Chappa.Ramya Sai,K.Kavya,K.Meghana,A.Tulasi	318-321
58	Predicting The Survival Of Patients With Heart Failure-Machine Learning Methods - Hemalatha Tatiparthi,G.Mounika,K.Prasanthi,G.Hemavani	322-329
59	Prediction Of Agriculture Yields Using Machine Learning Algorithms. - Katepalli Sai Sravanthi,Grandhisila Venkatanagalakshmipravallika,Kollipara Harika ,M. Mamatha	330-335
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62	Rainfall Prediction Using Machine Learning - Anusha Bhavanam,Ch. Vyshnavi, Ch.Priyanka	348-353
63	Review On Load Balancing Using Cloud Computing - J Raghunath ,A Chandra Sekhar, Shaik Razia, D Venkatesh	354-362
64	Road Safety And Vehicle Accident Prevention - G.Gayatri,G.Gayatri,K.Sugunitha	363-367
65	Sensile Soil Analyzing Application - Mathi Raasi,G.Santhi Sri,M Sravya,Shaik Khaja Mohiddin Basha	368-373
66	Sentiment Analysis Of Movie Reviews Using Ml -Mukunda Gagula,Lakshma Reddy,Sai Venkatesh,Shaik Rafi	374-377
67	Supevised Learning Models for perception of Multi-Trafic Scene	378-383
68	Smart Parking System Using Web Application. - K Razeena Begum, S Anand, K Vivek, K Manideep	384-387

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69	Social Distance Monitoring Using Deep Learning - Satuluri Vijaya Lakshmi.K.K.N. Bhuvaneswari. B.Vijaya Lakshmi	388-398
70	Stock Value Prediction Using Regression - B.Jhansi Vazram. G.Venkatrao. D.Srtinivasa Reddy. V.Ashok Kumar	399-404
71	Summarized Reviews With Attention Mechanism Using Lstm - Tahfeem Shaik,Sirajuddin,Shaikrafi	405-408
72	Supervised Learning For Fraud And Malware Detection From Android Applications. - Tunuguntla Bala Bhaskar Rao ,Dronadula Narendra. Maddu Phanindra Kumar.Dr. S.V.N.Srinivasu	409-415
73	Trust-Based Privacy Preserving Photo Sharing In Online Social Networks - Mrs R.Padmaja,Sk.Shahnoor. N.Nikhila. L.Thanusha	416-419
74	Useableness And Applications Of Blockchain Technology In Cloud Computing Environment - D Venkatesh.M Vijaya Bhaskar. J Raghunath. D Raghava Raju	420-426
75	Weather Prediction - Kotha Tharun Teja,G.Ashok,K.Raviteja,N.Raviteja	427-431
76	Wholesale And Retail Store Management System - Mr K Siva Rama Krishna.Saranya Bala.Y ,Triveni.V , Sai Divya	432-435

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CSE 258

Autoregressive Integrated Moving Average Model for Prediction of Crypto Currency

POKURI JAYA VENKATA NAGA SUDHAKAR[1], ALLADI ANIL[2], AVULA VENKATA RAMI REDDY[3], V. MAHESH BABU[4]

pokurisudhakar@gmail.com[1], anilalladi143@gmail.com[2], avulavenkataramireddy91@gmail.com[3], mailformrx@gmail.com[4]

[1,2,3]student,Department of MCA, Narasaraopeta Engineering College,
[4]Professor, Department of MCA, Narasaraopeta Engineering College

ABSTRACT

Over the past few years, Bitcoin has been a topic of interest of many, from academic researchers to trade investors. Bitcoin is the first as well as the most popular cryptocurrency till date. Since its launch in 2009, it has become widely popular amongst various kinds of people for its trading system without the need of a third party and due to high volatility of Bitcoin price. Thus, this article presents a suitable model that can predict the market price of Bitcoin best by applying a few statistical analyses. Our work is done on five and half year's bitcoin data from 2015 to 2020 based on time series analysis approach called autoregressive integrated moving average (ARIMA) model. Further, it is also compared to existing machine learning algorithm named linear regression (LR) model. Extensive prediction results shown that the proposed ARIMA model acquired superior performance for deciding volatility in weighted costs of bitcoin in the short run as compared to LR model.

Index Terms: Bitcoin, machine learning, time series analysis, ARIMA, linear regression.

I. INTRODUCTION

Bitcoin [1] is the worlds' most valuable cryptocurrency and is traded on over 40 exchanges worldwide accepting over 30 different currencies. It has a current market capitalization of 9 billion USD according to https://www.blockchain.info/ and sees over 250,000 transactions taking place per day. As a currency, Bitcoin offers a novel opportunity for price prediction due its relatively young age and resulting volatility, which is far greater than that of fiat currencies [2]. It is also unique in relation to traditional fiat currencies in terms of its open nature; no complete data exists regarding cash transactions or money in circulation for fiat currencies. Prediction of mature financial markets such as the stock market has been researched at length [3], [4]. Bitcoin presents an interesting parallel to this as it is a time series prediction problem in a market still in its transient stage. Traditional time series prediction methods such as Holt-Winters exponential smoothing models rely on linear assumptions and require data that can be broken down into trend, seasonal and noise to be effective [5]. This type of methodology is more suitable for a task such as forecasting sales where seasonal effects are present. Regardless of the substantial vacillations of Bitcoin prices (particularly during 2015 and early 2020) and the massive growth in the capitalization of the related market, the condemnations about illicit uses and social concerns, it has still managed to draw the attention of many investors, such as China who is buying Bitcoin, seeing this as an opportunity of investments [6], as well as researchers in the scientific community to study and understand the market in order to predict the worth of Bitcoin. Most importantly, for the huge popularity of bitcoin, the end of the year 2017 has been the time when the price has increased most noticeably which was worth to 1600 US dollar for 1 bitcoin [7]. Therefore, the analysis of financial data for predicting the future bitcoin price has always been an important field of research with a direct and indirect effect on world economy. Due to the lack of seasonality in the Bitcoin market and its high volatility, these methods are not highly effective for this task. Given the complexity of the task, machine learning makes for an interesting technological solution based on its performance in similar areas. Hence, a time series analysis is utilized in this paper in order to find out the pattern of bitcoin price movement and forecasting the closing price of the next few days as well as analyzing the performance of the time series models i.e., ARIMA model.

II. RELATED WORK

Research on predicting the price of Bitcoin using machine learning algorithms specifically is lacking. [8] implemented a latent source model as developed by [9] to predict the price of Bitcoin noting 89% return in 50 days with a Sharpe ratio of 4.1. There has also been work using text data from social media platforms and other sources to predict Bitcoin prices. [10] investigated sentiment analysis using support vector machines coupled with the frequency of Wikipedia views, and the network hash rate. [11] investigated the relationship between Bitcoin price, tweets, and views for Bitcoin on Google Trends. [12] implemented a

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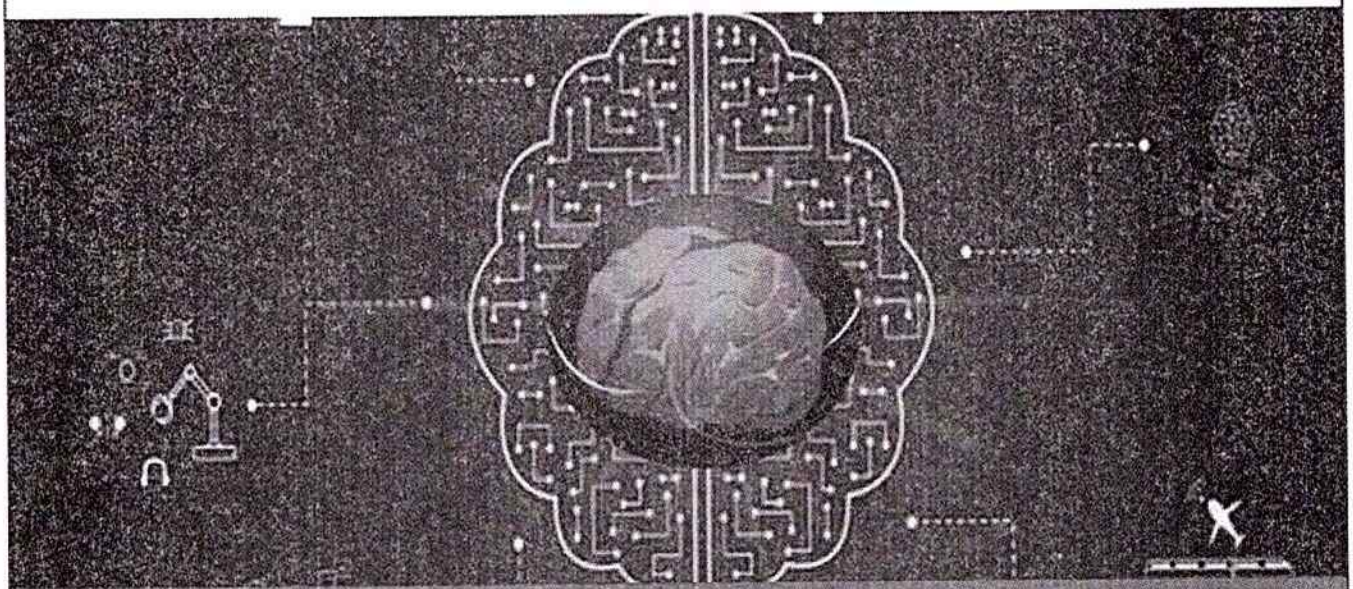

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REF. NO	TITLE OF THE PAPER AND AUTHOR(S)	Page No.
	Artificial Intelligence and Its Emerging Areas -NEC-ICAIIA 2K21	
1.	A Data Mining Based Model For Detection Of Deceitful Behaviour In Water Consumption - Tejasri Choudi.B.V.Satish, V.Naga Jyothi, K.Navya	1-5
2	A Machine Learning Framework For Prediction Of Heart Disease, Ramasetty Ramu.Kota Jagadeesh.Chanti Rajamohan Reddy.V. Mahesh Babu	6-10
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6	Autoregressive Integrated Moving Average Model For Prediction Of Crypto Currency, - Pokuri Jaya Venkata Naga Sudhakar.Alladi Anil.Avula Venkata Rami Reddy.V. Mahesh Babu	26--29
7	Biometric Identification Scheme With Efficient Privacy-Preserving Mechanism For Cloud Computing Service. - Shaik Ruksana.Bandaru Naga Siva Saisuryatejaswi.Yadavalli Yedukondalu.M Mamatha	30-34
8	Bitcoin Price Prediction -Mrs R.Padmaja.K.V.D Hanisha, B Amulya, M Harika	35-38
9	Calories Burned Prediction, - Niharika Motupalli, B.Siva Kanaka Raju Shaik Mehataj , U. Jhansi Rani, T .Bhavani	39-45
10	Cartoonize Image Using Deep Learning - Gouse Mastan Vali.D.Vamsi Krishna, A.Sairam.K.S.Lakshmi Narayana	46-54
11	Children Speech Recognition Using Machine Learning Methodologies - Dr.T.V.Sai Krishna, R Venkat	55-60

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NARASARAOPETA ENGINEERING COLLEGE
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12	Clarification Of Webbing Through Cloud Computing Technologies - Amara.S.A.L.G.Gopala Gupta,Dr. Gudapati Syam Prasad	61-65
13	Convolutional Lstm Model For Sentiment Analysis On Social Big Data - Raghuveer Pachipulusu,V.Ananth Reddy, R.Sai Kiran, T.Vignesh	66-72
14	Data Preprocessing For Efficient Prediction In Customer Relationship Management, - Patur Ganga, K.Arun	73-78
15	Design And Experimental Study Of Automatic Colour Sorting By A Robotic Arm System - T.Lakshmibai	79-82
16	Detection Of Autism Disorder Based On Eeg Signal Using Deep Learning Methods -Ranjani M.P.Supraja	83-87
17	Detection Of Online Public Shaming With Offensive Content On Twitter. - Gutta Sai Durga,Gopu Sandhya,Jonnalagadda Madhavi, Dr. S.V.N.Srinivasu	88-91
18	Detection Of Phishing Attacks Using Natural Language Processing And Logistic Regression Model. - Surubula Thirupathi Rao,Pothukuchi Mahesh Babu,Rayala Venu,V. Mahesh Babu	92-98
19	Detection Of Social Network Mental Disorders Through Mining Of Online Social Media. - Battula Venkata Ananta Mehar Gopi,Rajarapu Venu Babu,Maddineni Naveen ,Dr. S.V.N.Srinivasu	99-103
20	predections in healthy population through machine learning	104-108
21	Diabetics Prediction using Machine Learning Techniques, - Pathan Sajida, S.Amulya , V.Nandhini	109-114
22	DL-CNN Framework For Malicious Social Bots Detection, - Syed Fathima,Ponnapati Mallika,Gandru Akhilendra Chowdary,M. Mamatha	115-120
23	Door Security System Using Face Recognition -Dr A Srinivasa Rao,K.G.J.Prasanth, M. Rama Rao	121-123
24	ECG Classification With Convolutional Neural Networks - S V N Sreenivasu,T Bhargavika,B Anusha ,P Jayasri	124-129
25	Emotion Recognition From Multimodal Data(Speech, Video, Text) Based On Deep Learning Techniques D.P.Supraja	130-137

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NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

26	Estimation Of Population Analysis - Tarun.G.Tarun.T.Purnavamsi.K.Vivekreddy	138-142
27	Eye Ball Cursor Movement Using Opencv - B.Preethi.D.Bharadwaja.B.Preethi. K.Charithra Lavanya.N.Sony	143-147
28	Face.Age And Gender Recogntion System Based on Deep Neural Networks - Gudapati Syam Prasad.K.Narendra Babu.N.Hemanth Kumar.K.Sriniivas	148-154
29	Facial Expression Recognition With Convolutional Neural Networks - S. Siva Nageswara Rao.S.Ramya. T.Anantha Lavanya	155-162
30	Fake Currency Detection. - Mr.Sk.K.M.Basha , Yalagala Hema Latha. Gatakala Venkata Sravya Bhavani. Macharla Maitili	163-167
31	Fake News Detection - Gangasani Likitha. I. Navya Sri. D. Swetha	168-175
32	Fake News Detection Using Machine Learning - Srikanth Mylapalli.Mylapalli Ramesh	176-180
33	Forest Fires Detection Using Machine Learning Algorithms - N.S.Sesi Kiran.P. Lakshmi Narayana. Sk. Mastanvali. P. Nivas	181-185
34	Functioning Of Artificial Intelligence In An Self-Driving Vehicle - A Review -Penugonda Surya Teja.None	186-189
35	Generic Recommendation Engine Using Hybrid Filtering Model - G Prabhakara Reddy.O Ramesh. Ch Anil	190-200
36	Head Motion Detection - Dr A Srinivasa Rao.M.Prathyusha. Y.Rajeswari	201-203
37	Heart Disease Prediction Using Machine Learning - Jhansi Lakshmi Manukonda ,R. V. P. S. Rekha. T. Divya. G. L. N. Jayaprada	204-208
38	House Price Prediction - Bodlapati Sowmya Reddy.M. Yamini Priya. P. Manasa	209-213
39	Image Captioning Using Deep Learning - Y E V Pratap Kumar Kuchi.M.Sireesha. G. Sai Akhil. K. Hema Sai Mourya Gupta	214-219

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NARASARAOPETA ENGINEERING COLLEGE
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Guntur (Dist.), A.P.

40	Image Classification Using Object Detection With YOLO Algorithm. Shaik Bhadhar Shareef.Putchakayala Ramesh.Angajala Anil.G. Sambasiva Rao	220-223
41	Implementation Of Video Steganography Cryptography System For Iot-Based Cloud Computing Security. - Samvarapu Sagar Reddy.Mallavarapu Nikhil.Chevala Venkatesh.Dr. S.V.N Srinivasu	224-228
42	Inform Me-Family Gps Locator - Oruganti Ramesh.G Prabhakara Reddy. Ch. Anil	229-233
43	Ipl Score Prediction Using Machine Learning Methods - Rajyalakshmi Dondapati.N.Likitha.M.Anmisha	234-241
44	Liver Disease Prediction Using Machine Learning Methods - Sravana Sandhya Rani Karnati.K. Sravana Sandhya Rani, B.V.Gayithri.K.Vijayalakshmi	242-249
45	Loan Prediction System - Divya Gopavarapu.K.Manasa.A.Akhila.M.Sireesha	250-255
46	Lung Cancer Prediction - Naga Mallika Gude.M. Navya Sri. B. Sukanya	256-263
47	Map Reduced Segmentation Clustering For Big Data Analytics Using Extended K-Mean Clustering Technique - Mvs.Prasad	264-270
48	Mask R-Cnn For Fire Detection - Razeena Begum Shaik.S Yogananda Datta . M S V Manoj	271-276
49	Melanoma Prediction Using Deep Learning - Aishwarya Nallapati.D. Jaya Tejaswini. J. Prashanthi. T. Siri Chandana	277-280
50	Multilevel Hierarchy Based Privacy Preserved Profile Publishing In Cloud Environment. - Esthala Abhishek.Kambhampati Adinarayana.Battula Ramesh.G. Sambasiva Rao	281-286
51	Music Recommendation Application Based On Facial Expressions - Ms Mohammad Arsha Sultana.Abdul Saherabegum. Akhila Umma. Guthula Jayasri Sai Nikitha	287-290
52	Mutual Fund Prediction Using Machine Learning - Shaik Nannu Saidavali.N.Vinay Chandra Pal. K.Bhaskar Reddy	291-295
53	Network Coding Techniques To Store The Data Securely In Cloud. - Guru Brahmam Madala. Vijay Anand R	296-301
54	Network Spam And Fake User Detection In Online Social Networks Using Support Vector Machine. - Majeti Pavan Kalyan.Anchula Sreekanth.Ravi Mahesh Babu.G. Sambasiva Rao	302-307
55	Next Word Prediction Using Recurrent Neural Networks - Srikanth Kolisetty.B. Venkateswarlu. S. Siva Sai Kumar. T. Uday Kumar	308-313

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56	Nobel Methodologies For Immigration Of Service Oriented Architecture Based Applications To Microservice Architecture - M Madhu Sudhan, P Indupriyankaray, Aelluri Lakshmi, M Sreenandan Reddy	314-317
57	Plant Leaf Disease Detection System Using Resnet-50 - Chappa.Ramya Sai,K.Kavya.K.Meghana.A.Tulasi	318-321
58	Predicting The Survival Of Patients With Heart Failure-Machine Learning Methods - Hemalatha Tatiparthi,G.Mounika.K.Prasanthi.G.Hemavani	322-329
59	Prediction Of Agriculture Yields Using Machine Learning Algorithms. - Katepalli Sai Sravanthi,Grandhisila Venkatanagalakshmipravallika,Kollipara Harika ,M. Mamatha	330-335
60	Prediction Of Covid 19 Epidemics Using Data Analytics - S.Anil Kumar,G.Sathar	336-343
61	Prediction Of Covid Readmissions Using Machine Learning - Athukuri Lakshmi Narendra Kumar.B.V.V.N.Sai Kumar	344-347
62	Rainfall Prediction Using Machine Learning - Anusha Bhavanam,Ch. Vyshnavi, Ch.Priyanka	348-353
63	Review On Load Balancing Using Cloud Computing - J Raghunath ,A Chandra Sekhar, Shaik Razia, D Venkatesh	354-362
64	Road Safety And Vehicle Accident Prevention - G.Gayatri,G.Gayatri.K.Sugunitha	363-367
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Cartoonize Image Using Deep Learning

Sk. Gouse Mastan Vali[1a], D. Vamsi Krishna[1b], A. Sairam[1c], K.S. Lakshmi Narayana[1d], P. Lakshmi Narayana[2]
[1]*Department of CSE, Narasaraopet Engineering College, Narasaraopet, A.P, India*
[a] gousemastan7867@gmail.com
[b] vamsi.9182049979gmail.com
[c] sairam55@gmail.com
[d] nanisreeram1999@gmail.com
[2]*Asst. Prof, Department of CSE, Narasaraopet Engineering College, Narasaraopet, A.P, India*
[2] lakshmi.778@gmail.com

***Abstract*-- This paper presents an approach for image cartooniza- tion. By observing the cartoon painting behavior and consulting artists, we propose to separately identify three white-box representations from images: the surface rep- resentation that contains a smooth surface of cartoon im- ages, the structure representation that refers to the sparse color-blocks and flatten global content in the celluloid style workflow, and the texture representation that reflects high- frequency texture, contours, and details in cartoon im- ages. A Generative Adversarial Network (GAN) framework is used to learn the extracted representations and to cartoonize images. The learning objectives of our method are separately based on each extracted representations, making our frame- work controllable and adjustable. This enables our ap- proach to meet artists' requirements in different styles and diverse use cases.**

***Keywords*-- Deep Learning, Convoulution Neural Networks, Cartoonization, White box representation, Cartoon Generative Adversarial Network (cartoonGAN).**

I. INTRODUCTION

Cartoon is a popular art form that has been widely ap- plied in diverse scenes. Modern cartoon animation work- flows allow artists to use a variety of sources to create con- tent. Some famous products have been created by turning real- world photography into usable cartoon scene materials, where the process is called image cartoonization.

The variety of cartoon styles and use cases require task- specific assumptions or prior knowledge to develop usable algorithms. For example, some cartoon workflows pay more attention to global palette themes, but the sharpness of lines is a secondary issue. In some other workflows, sparse and clean color blocks play a dominant role in artistic ex- pression, but the themes are relatively less emphasized.

CartoonGAN is designed for image cartoonization, in which a GAN frame- work with a novel edge loss is proposed and achieves good results in certain cases. But using a black- box model to directly fit the training data decreased its generality and stylization quality, causing bad cases in some situations.

we propose to decompose images into several cartoon representations, and list them as follows.

Firstly, we extract the surface representation to repre- sent the smooth surface of images. we extract a weighted low- frequency component, where the color composition and surface texture are preserved with edges, textures and details ignored.

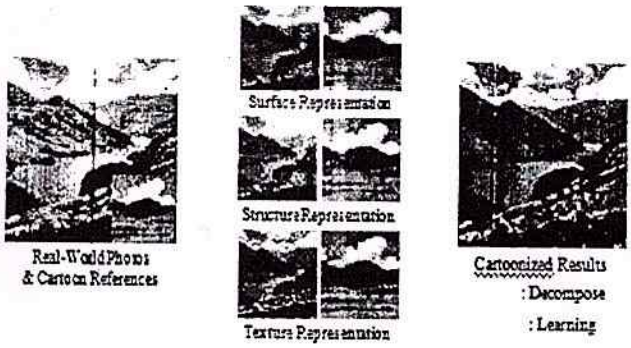

Fig. 1 Cartoonization Process

Figure 1: A simple illustration of our method. Images are decomposed into three cartoon representations, which guide the network optimization to generate cartoonized photos. Behavior where artists usually draw composition drafts before the details are retouched and is used to achieve a flexible and learnable feature representation for smoothed surfaces.

Secondly, the structure representation is proposed to ef- fectively seize the global structural information and sparse color blocks in celluloid cartoon style. We extract a seg- mentation map from the input image and then apply an adaptive coloring algorithm on each segmented regions to generate the structure representation. This representation is motivated to emulate the celluloid cartoon style, which is featured by clear boundaries and sparse color blocks.

The structure representation is of great significance for generating the sparse visual effects, as well as for our method to be embedded in the celluloid style cartoon workflow.

Thirdly, we use the texture representation to contain painted details and edges. The input image $I \in RW \times H \times 3$ is converted to a single-channel intensity map $It \in RW \times H \times 1$, where the color and luminance are removed and relative pixel intensity is preserved. This feature representation is motivated by a cartoon painting method where artists firstly draw a line sketch with contours and details, and then apply color on it. It

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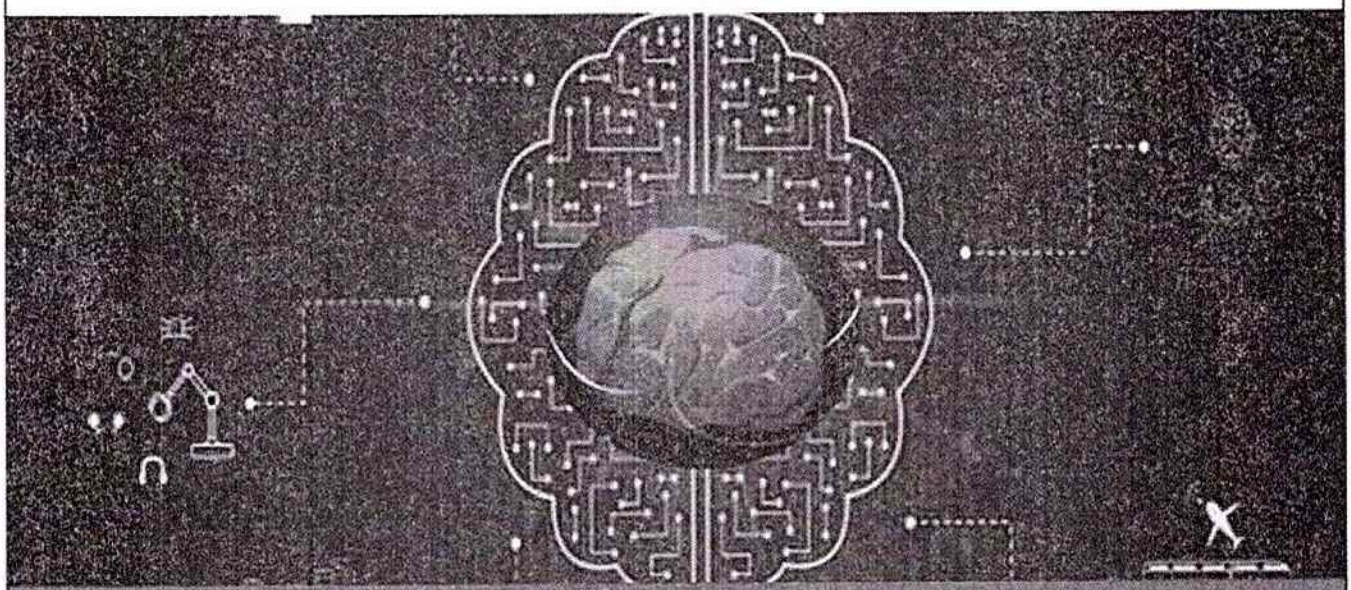

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-

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	Artificial Intelligence and Its Emerging Areas -NEC-ICAIIA 2K21	
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7	Biometric Identification Scheme With Efficient Privacy-Preserving Mechanism For Cloud Computing Service. - Shaik Ruksana,Bandaru Naga Siva Saisuryatejaswi,Yadavalli Yedukondalu,M Mamatha	30-34
8	Bitcoin Price Prediction -Mrs R.Padmaja,K.V.D Hanisha, B Amulya, M Harika	35-38
9	Calories Burned Prediction, - Niharika Motupalli, B.Siva Kanaka Raju Shaik Mehataj , U. Jhansi Rani, T .Bhavani	39-45
10	Cartoonize Image Using Deep Learning - Gouse Mastan Vali,D.Vamsi Krishna, A.Sairam,K.S.Lakshmi Narayana	46-54
11	Children Speech Recognition Using Machine Learning Methodologies - Dr.T.V.Sai Krishna, R Venkat	55-60

IQAC

Principal
NARASARAOPETA ENGINEERING COLLEGE
(AUTONOMOUS)
NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

12	Clarification Of Webbing Through Cloud Computing Technologies - Amara.S.A.L.G.Gopala Gupta.Dr. Gudapati Syam Prasad	61-65
13	Convolutional Lstm Model For Sentiment Analysis On Social Big Data - Raghuveer Pachipulusu.V.Ananth Reddy. R.Sai Kiran. T.Vignesh	66-72
14	Data Preprocessing For Efficient Prediction In Customer Relationship Management. - Patur Ganga. K.Arun	73-78
15	Design And Experimental Study Of Automatic Colour Sorting By A Robotic Arm System - T.Lakshmibai	79-82
16	Detection Of Autism Disorder Based On Eeg Signal Using Deep Learning Methods -Ranjani M.P.Supraja	83-87
17	Detection Of Online Public Shaming With Offensive Content On Twitter. - Gutta Sai Durga.Gopu Sandhya.Jonnalagadda Madhavi. Dr. S.V.N.Srinivasu	88-91
18	Detection Of Phishing Attacks Using Natural Language Processing And Logistic Regression Model. - Surubula Thirupathi Rao.Pothukuchi Mahesh Babu.Rayala Venu.V. Mahesh Babu	92-98
19	Detection Of Social Network Mental Disorders Through Mining Of Online Social Media. - Battula Venkata Ananta Mehar Gopi.Rajarapu Venu Babu.Maddineni Naveen .Dr. S.V.N.Srinivasu	99-103
20	predections in healthy population through machine learning	104-108
21	Diabetics Prediction using Machine Learning Techniques. - Pathan Sajida. S.Amulya . V.Nandhini	109-114
22	DL-CNN Framework For Malicious Social Bots Detection. - Syed Fathima.Ponnapati Mallika.Gandru Akhilendra Chowdary.M. Mamatha	115-120
23	Door Security System Using Face Recognition -Dr A Srinivasa Rao.K.G.J.Prasanth. M. Rama Rao	121-123
24	ECG Classification With Convolutional Neural Networks - S V N Sreenivasu.T Bhargavika.B Anusha .P Jayasri	124-129
25	Emotion Recognition From Multimodal Data(Speech. Video. Text) Based On Deep Learning Techniques D.P.Supraja	130-137

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NARASARAOPET - 522 601.
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26	Estimation Of Population Analysis - Tarun.G.Tarun.T.Purnavamsi.K.Vivekreddy	138-142
27	Eye Ball Cursor Movement Using Opencv - B.Preethi.D.Bharadwaja.B.Preethi. K.Charithra Lavanya.N.Sony	143-147
28	Face.Age And Gender Recogntion System Based on Deep Neural Networks - Gudapati Syam Prasad.K.Narendra Babu.N.Hemanth Kumar.K.Sriniivas	148-154
29	Facial Expression Recognition With Convolutional Neural Networks - S. Siva Nageswara Rao.S.Ramya. T.Anantha Lavanya	155-162
30	Fake Currency Detection. - Mr.Sk.K.M.Basha , Yalagala Hema Latha. Gatakala Venkata Sravya Bhavani. Macharla Maitili	163-167
31	Fake News Detection - Gangasani Likitha. I. Navya Sri. D. Swetha	168-175
32	Fake News Detection Using Machine Learning - Srikanth Mylapalli.Mylapalli Ramesh	176-180
33	Forest Fires Detection Using Machine Learning Algorithms - N.S.Sesi Kiran.P. Lakshmi Narayana. Sk. Mastanvali. P. Nivas	181-185
34	Functioning Of Artificial Intelligence In An Self-Driving Vehicle - A Review -Penugonda Surya Teja.None	186-189
35	Generic Recommendation Engine Using Hybrid Filtering Model - G Prabhakara Reddy.O Ramesh. Ch Anil	190-200
36	Head Motion Detection - Dr A Srinivasa Rao.M.Prathyusha. Y.Rajeswari	201-203
37	Heart Disease Prediction Using Machine Learning - Jhansi Lakshmi Manukonda .R. V. P. S. Rekha. T. Divya. G. L. N. Jayaprada	204-208
38	House Price Prediction - Bodlapati Sowmya Reddy.M. Yamini Priya. P. Manasa	209-213
39	Image Captioning Using Deep Learning - Y E V Pratap Kumar Kuchi.M.Sireesha. G. Sai Akhil. K. Hema Sai Mourya Gupta	214-219

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NARASARAOPETA ENGINEERING COLLEGE
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NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

40	Image Classification Using Object Detection With YOLO Algorithm. Shaik Bhadhar Shareef.Putchakayala Ramesh..Angajala Anil.G. Sambasiva Rao	220-223
41	Implementation Of Video Steganography Cryptography System For Iot-Based Cloud Computing Security . - Sanivarapu Sagar Reddy.Mallavarapu Nikhil.Chevala Venkatesh.Dr. S.V.N.Srinivasu	224-228
42	Inform Me-Family Gps Locator - Oruganti Ramesh.G Prabhakara Reddy. Ch. Anil	229-233
43	Ipl Score Prediction Using Machine Learning Methods - Rajyalakshmi Dondapati.N.Likitha.M.Anmisha	234-241
44	Liver Disease Prediction Using Machine Learning Methods - Sravana Sandhya Rani Karnati.K. Sravana Sandhya Rani. B.V.Gayithri.K.Vijayalakshmi	242-249
45	Loan Prediction System - Divya Gopavarapu.K.Manasa.A.Akhila.M.Sireesha	250-255
46	Lung Cancer Prediction - Naga Mallika Gude.M. Navya Sri. B. Sukanya	256-263
47	Map Reduced Segmentation Clustering For Big Data Analytics Using Extended K-Mean Clustering Technique - Mvs.Prasad	264-270
48	Mask R-Cnn For Fire Detection - Razeena Begum Shaik.S Yogananda Datta . M S V Manoj	271-276
49	Melanoma Prediction Using Deep Learning - Aishwarya Nallapati.D. Jaya Tejaswini. J. Prashanthi. T. Siri Chandana	277-280
50	Multilevel Hierarchy Based Privacy Preserved Profile Publishing In Cloud Environment. - Esthala Abhishek.Kambhampati Adinarayana.Battula Ramesh.G. Sambasiva Rao	281-286
51	Music Recommendation Application Based On Facial Expressions - Ms Mohammad Arsha Sultana.Abdul Saherabegum. Akhila Umma. Guthula Jayasri Sai Nikitha	287-290
52	Mutual Fund Prediction Using Machine Learning - Shaik Nannu Saidavali.N.Vinay Chandra Pal. K.Bhaskar Reddy	291-295
53	Network Coding Techniques To Store The Data Securely In Cloud. - Guru Brahmam Madala. Vijay Anand R	296-301
54	Network Spam And Fake User Detection In Online Social Networks Using Support Vector Machine. - Majeti Pavan Kalyan.Anchula Sreekanth.Ravi Mahesh Babu.G. Sambasiva Rao	302-307
55	Next Word Prediction Using Recurrent Neural Networks - Srikanth Kolisetty.B. Venkateswarlu. S. Siva Sai Kumar. T. Uday Kumar	308-313

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56	Nobel Methodologies For Immigration Of Service Oriented Architecture Based Applications To Microservice Architecture - M Madhu Sudhan, P Indupriyankaray, Aelluri Lakshmi, M Sreenandan Reddy	314-317
57	Plant Leaf Disease Detection System Using Resnet-50 - Chappa.Ramya Sai,K.Kavya,K.Meghana,A.Tulasi	318-321
58	Predicting The Survival Of Patients With Heart Failure-Machine Learning Methods - Hemalatha Tatiparthi,G.Mounika,K.Prasanthi,G.Hemavani	322-329
59	Prediction Of Agriculture Yields Using Machine Learning Algorithms. - Katepalli Sai Sravanthi,Grandhisila Venkatanagalakshmipravallika,Kollipara Harika ,M. Mamatha	330-335
60	Prediction Of Covid 19 Epidemics Using Data Analytics - S.Anil Kumar,G.Sathar	336-343
61	Prediction Of Covid Readmissions Using Machine Learning - Athukuri Lakshmi Narendra Kumar,B.V.V.N.Sai Kumar	344-347
62	Rainfall Prediction Using Machine Learning - Anusha Bhavanam,Ch. Vyshnavi, Ch.Priyanka	348-353
63	Review On Load Balancing Using Cloud Computing - J Raghunath ,A Chandra Sekhar, Shaik Razia, D Venkatesh	354-362
64	Road Safety And Vehicle Accident Prevention - G.Gayatri,G.Gayatri,K.Sugunitha	363-367
65	Sensile Soil Analyzing Application - Mathi Raasi,G.Santhi Sri,M Sravya,Shaik Khaja Mohiddin Basha	368-373
66	Sentiment Analysis Of Movie Reviews Using Ml -Mukunda Gagula,Lakshma Reddy,Sai Venkatesh,Shaik Rafi	374-377
67	Supevised Learning Models for perception of Multi-Trafic Scene	378-383
68	Smart Parking System Using Web Application, - K Razeena Begum, S Anand, K Vivek, K Manideep	384-387

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69	Social Distance Monitoring Using Deep Learning - Satuluri Vijaya Lakshmi.K.K.N. Bhuvaneswari. B.Vijaya Lakshmi	388-398
70	Stock Value Prediction Using Regression - B.Jhansi Vazram. G.Venkatrao. D.Srtinivasa Reddy. V.Ashok Kumar	399-404
71	Summarized Reviews With Attention Mechanism Using Lstm - Tahfeem Shaik,Sirajuddin,Shaikrafi	405-408
72	Supervised Learning For Fraud And Malware Detection From Android Applications. - Tunuguntla Bala Bhaskar Rao ,Dronadula Narendra. Maddu Phanindra Kumar.Dr. S.V.N.Srinivasu	409-415
73	Trust-Based Privacy Preserving Photo Sharing In Online Social Networks - Mrs R.Padmaja,Sk.Shahnoor. N.Nikhila. L.Thanusha	416-419
74	Useableness And Applications Of Blockchain Technology In Cloud Computing Environment - D Venkatesh,M Vijaya Bhaskar. J Raghunath. D Raghava Raju	420-426
75	Weather Prediction - Kotha Tharun Teja.G.Ashok.K.Raviteja.N.Raviteja	427-431
76	Wholesale And Retail Store Management System - Mr K Siva Rama Krishna,Saranya Bala.Y ,Triveni.V . Sai Divya	432-435

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Detection of Online Public Shaming with Offensive Content on Twitter

GUTTA SAI DURGA[1], GOPU SANDHYA[2], JONNALAGADDA MADHAVI[3] , Dr. S.V.N.SRINIVASU[4]
saidurgapadma@gmail.com[1], nulasandhya@gmail.com[2], jmadhavi6511@gmail.com[3], drsvnsrinivasu@gmail.com[4]
[1,2,3]student, Department of MCA, Narasaraopeta Engineering College, [4]Professor, Department of CSE, Narasaraopeta Engineering College

Abstract

People are utilizing the various types of online social Networks (OSNs) in their regular life. Public shaming becomes the major problem in OSNs with the hate speech and abusive content. Considerable research has been done to detection of public shaming by using the Machine learning and deep learning methods. But, the attackers using the emojis and various kinds of symbols in their content, thus the existing methods are failed to detect the Online Public Shaming on Twitter. Thus to overcome this problem, the proposed method introduced the Continuous Bag of Words model, Paragraph Vector - Distributed Bag of Words model and Paragraph Vector - Distributed Memory model to perform the pre-processing followed by embedding vector creation operation respectively. Then Recursive neural network based LSTM classification model is trained with the Offensive Language Identification Dataset (OLID) and tested on the random input tweets. The proposed classifier successfully identifies the public shaming data from input tweet and classified it as either offensive tweet or non- offensive tweet. The simulation Results shows that, the proposed method gives the enhancive performance metrics compared to the state of art approaches.

Keywords: LSTM, OLID

1. Introduction

With the growth in the use of social networking sites and user-created content over the last decade, research on the identification of abusive, derogatory, hurtful, obscene, offensive, profane, vitriolic or vulgar language with a view towards prevention of the said language has evolved in the domain of natural language processing. This study, like many others [1-2] focuses on the issues in detection and identification of offensive language. Further, taking inspiration from the work done for Task 6 during SemEval-2019 and using the Offensive Language Identification Dataset (OLID) as reference dataset, the problem of detecting offensive language in tweets is tackled in this study. A major challenge faced in detection of offensive language is that mere presence or absence of abusive, derogatory, hurtful, obscene, offensive, profane, vitriolic or vulgar words is not the only criteria to label a tweet as offensive or not offensive respectively and should be allowed to not mislead classifiers. Example [3-5], "God Dammit, I can't find the f*cking keys". Should not be classified as offensive because of the use of the word "f*cking", as it is used to add emphasis. Also, from a practical perspective, it may not be feasible to flag all things containing offensive words, considering the widespread use of profane language in informal conversations and the Internet's general unregulated and uncensored existence [6-9]. Ideally, the classifier must take into account some level of underlying context or intent before flagging a tweet as offensive or not offensive. This is achieved by the use of document embedding like Doc2Vec which is based on paragraph vectors proposed in [10-12] which uses distributional semantic relationships between words. Document embeddings have shown promising results in other similar text classification problems like sentiment analysis of movie reviews, etc [13].

2. Proposed Method

Word2vec embeddings have demonstrated superior efficiency in classification of texts and clustering. Hitherto however, no study has utilized doc2vec embeddings in offensive language detection. Using the OLID dataset, we have created doc2vec document embeddings and utilized these embeddings as features to train various supervised learning models. Figure .1 represents the proposed system model with preprocessing, dataset splitting and different classification algorithms.

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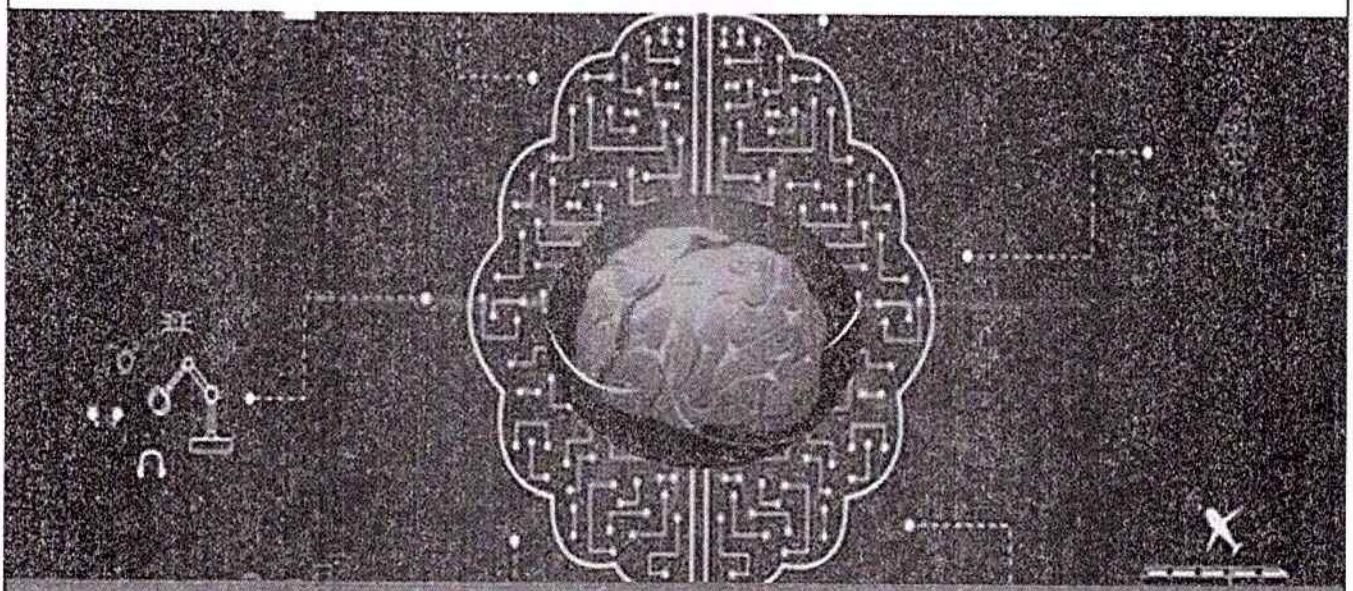

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International Conference On

Artificial Intelligence and Its Emerging Areas

-

REF. NO	TITLE OF THE PAPER AND AUTHOR(S)	Page No.
	Artificial Intelligence and Its Emerging Areas -NEC-ICAIIA 2K21	
1.	A Data Mining Based Model For Detection Of Deceitful Behaviour In Water Consumption - Tejasri Choudi,B.V.Satish, V.Naga Jyothi, K.Navya	1-5
2	A Machine Learning Framework For Prediction Of Heart Disease. Ramasetty Ramu,Kota Jagadeesh,Chanti Rajamohan Reddy,V. Mahesh Babu	6-10
3	A Supervised Learning Algorithm For Credit Card Fraud Detection. - Guggilam Sai Sri, Gummadilli Gouthami, Potluri Srividya, M. Mamatha	11-15
4	Amazon Product Review Sentiment Analysis Using Machine Learning - Ms Mohammad Arsha Sultana,P. Rakesh, M. Sandeep, G. Jagadeesh	16-20
5	An Interactive Study Of Thyroid Disease Prediction Using Machine Learning - D. Lokesh Gupta, D.Lokesh Gupta, K.V.Narasimha Reddy, D.Ramesh, V.Veerendra	21-25
6	Autoregressive Integrated Moving Average Model For Prediction Of Crypto Currency. - Pokuri Jaya Venkata Naga Sudhakar,Alladi Anil,Avula Venkata Rami Reddy,V. Mahesh Babu	26--29
7	Biometric Identification Scheme With Efficient Privacy-Preserving Mechanism For Cloud Computing Service. - Shaik Ruksana,Bandaru Naga Siva Saisuryatejaswi,Yadavalli Yedukondalu,M. Mamatha	30-34
8	Bitcoin Price Prediction -Mrs R.Padmaja,K.V.D Hanisha, B Amulya, M Harika	35-38
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12	Clarification Of Webbing Through Cloud Computing Technologies - Amara.S.A.L.G.Gopala Gupta.Dr. Gudapati Syam Prasad	61-65
13	Convolutional Lstm Model For Sentiment Analysis On Social Big Data - Raghuveer Pachipulusu,V.Ananth Reddy. R.Sai Kiran. T.Vignesh	66-72
14	Data Preprocessing For Efficient Prediction In Customer Relationship Management. - Patur Ganga. K.Arun	73-78
15	Design And Experimental Study Of Automatic Colour Sorting By A Robotic Arm System - T.Lakshmibai	79-82
16	Detection Of Autism Disorder Based On Eeg Signal Using Deep Learning Methods -Ranjani M.P.Supraja	83-87
17	Detection Of Online Public Shaming With Offensive Content On Twitter. - Gutta Sai Durga.Gopu Sandhya.Jonnalagadda Madhavi. Dr. S.V.N.Srinivasu	88-91
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23	Door Security System Using Face Recognition -Dr A Srinivasa Rao.K.G.J.Prasanth. M. Rama Rao	121-123
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25	Emotion Recognition From Multimodal Data(Speech. Video. Text) Based On Deep Learning Techniques D.P.Supraja	130-137

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26	Estimation Of Population Analysis - Tarun.G.Tarun.T.Purnavamsi.K.Vivekreddy	138-142
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28	Face.Age And Gender Recogntion System Based on Deep Neural Networks - Gudapati Syam Prasad.K.Narendra Babu.N.Hemanth Kumar.K.Sriniivas	148-154
29	Facial Expression Recognition With Convolutional Neural Networks - S. Siva Nageswara Rao.S.Ramya. T.Anantha Lavanya	155-162
30	Fake Currency Detection. - Mr.Sk.K.M.Basha , Yalagala Hema Latha. Gatakala Venkata Sravya Bhavani. Macharla Maitili	163-167
31	Fake News Detection - Gangasani Likitha. I. Navya Sri. D. Swetha	168-175
32	Fake News Detection Using Machine Learning - Srikanth Mylapalli.Mylapalli Ramesh	176-180
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36	Head Motion Detection - Dr A Srinivasa Rao.M.Prathyusha. Y.Rajeswari	201-203
37	Heart Disease Prediction Using Machine Learning - Jhansi Lakshmi Manukonda .R. V. P. S. Rekha. T. Divya. G. L. N. Jayaprada	204-208
38	House Price Prediction - Bodlapati Sowmya Reddy.M. Yamini Priya. P. Manasa	209-213
39	Image Captioning Using Deep Learning - Y E V Pratap Kumar Kuchi.M.Sireesha. G. Sai Akhil. K. Hema Sai Mourya Gupta	214-219

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46	Lung Cancer Prediction - Naga Mallika Gude.M. Navya Sri, B. Sukanya	256-263
47	Map Reduced Segmentation Clustering For Big Data Analytics Using Extended K-Mean Clustering Technique - Mvs.Prasad	264-270
48	Mask R-Cnn For Fire Detection - Razeena Begum Shaik.S Yogananda Datta . M S V Manoj	271-276
49	Melanoma Prediction Using Deep Learning - Aishwarya Nallapati.D. Jaya Tejaswini, J. Prashanthi, T. Siri Chandana	277-280
50	Multilevel Hierarchy Based Privacy Preserved Profile Publishing In Cloud Environment. - Esthala Abhishek.Kambhampati Adinarayana.Battula Ramesh.G. Sambasiva Rao	281-286
51	Music Recommendation Application Based On Facial Expressions - Ms Mohammad Arsha Sultana.Abdul Saherabegum, Akhila Umma, Guthula Jayasri Sai Nikitha	287-290
52	Mutual Fund Prediction Using Machine Learning - Shaik Nannu Saidavali.N.Vinay Chandra Pal, K.Bhaskar Reddy	291-295
53	Network Coding Techniques To Store The Data Securely In Cloud. - Guru Brahmam Madala, Vijay Anand R	296-301
54	Network Spam And Fake User Detection In Online Social Networks Using Support Vector Machine. - Majeti Pavan Kalyan.Anchula Sreekanth.Ravi Mahesh Babu.G. Sambasiva Rao	302-307
55	Next Word Prediction Using Recurrent Neural Networks - Srikanth Kolisetty.B. Venkateswarlu, S.Siva Sai Kumar, T. Uday Kumar	308-313

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57	Plant Leaf Disease Detection System Using Resnet-50 - Chappa.Ramya Sai.K.Kavya.K.Meghana.A.Tulasi	318-321
58	Predicting The Survival Of Patients With Heart Failure-Machine Learning Methods - Hemalatha Tatiparthi,G.Mounika.K.Prasanthi,G.Hemavani	322-329
59	Prediction Of Agriculture Yields Using Machine Learning Algorithms. - Katepalli Sai Sravanthi,Grandhisila Venkatanagalakshmipravallika.Kollipara Harika ,M. Mamatha	330-335
60	Prediction Of Covid 19 Epidemics Using Data Analytics - S.Anil Kumar,G.Sathar	336-343
61	Prediction Of Covid Readmissions Using Machine Learning - Athukuri Lakshmi Narendra Kumar,B.V.V.N.Sai Kumar	344-347
62	Rainfall Prediction Using Machine Learning - Anusha Bhavanam,Ch. Vyshnavi, Ch.Priyanka	348-353
63	Review On Load Balancing Using Cloud Computing - J Raghunath ,A Chandra Sekhar, Shaik Razia, D Venkatesh	354-362
64	Road Safety And Vehicle Accident Prevention - G.Gayatri,G.Gayatri,K.Sugunitha	363-367
65	Sensile Soil Analyzing Application - Mathi Raasi,G.Santhi Sri,M Sravya,Shaik Khaja Mohiddin Basha	368-373
66	Sentiment Analysis Of Movie Reviews Using Ml -Mukunda Gagula,Lakshma Reddy,Sai Venkatesh,Shaik Rafi	374-377
67	Supevised Learning Models for perception of Multi-Trafic Scene	378-383
68	Smart Parking System Using Web Application, - K Razeena Begum, S Anand, K Vivek, K Manideep	384-387

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69	Social Distance Monitoring Using Deep Learning - Satuluri Vijaya Lakshmi.K.K.N. Bhuvaneswari. B.Vijaya Lakshmi	388-398
70	Stock Value Prediction Using Regression - B.Jhansi Vazram. G.Venkatrao. D.Srtinivasa Reddy. V.Ashok Kumar	399-404
71	Summarized Reviews With Attention Mechanism Using Lstm - Tahfeem Shaik,Sirajuddin,Shaikrafi	405-408
72	Supervised Learning For Fraud And Malware Detection From Android Applications. - Tunuguntla Bala Bhaskar Rao .Dronadula Narendra. Maddu Phanindra Kumar.Dr. S.V.N.Srinivasu	409-415
73	Trust-Based Privacy Preserving Photo Sharing In Online Social Networks - Mrs R.Padmaja,Sk.Shahnoor. N.Nikhila. L.Thanusha	416-419
74	Useableness And Applications Of Blockchain Technology In Cloud Computing Environment - D Venkatesh.M Vijaya Bhaskar. J Raghunath. D Raghava Raju	420-426
75	Weather Prediction - Kotha Tharun Teja,G.Ashok,K.Raviteja,N.Raviteja	427-431
76	Wholesale And Retail Store Management System - Mr K Siva Rama Krishna,Saranya Bala.Y .Triveni.V . Sai Divya	432-435

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Detection of Phishing Attacks using Natural Language Processing and Logistic Regression Model

SURUBULA THIRUPATHI RAO[1], POTHUKUCHI MAHESH BABU[2], RAYALA VENU[3], V. MAHESH BABU[4]
surubulathirupathirao@gmail.com[1],pothukuchimaheshbabu@gmail.com[2],
rayalavenu9@gmail.com[3], mailformrx@gmail.com[4]

[1,2,3]student ,Department of MCA, Narasaraopeta Engineering College, [4]Associate Professor,Department of MCA, Narasaraopeta Engineering College

ABSTRACT

The increasing volume of unsolicited bulk e-mail (also known as spam) has generated a need for reliable anti-spam filters. Machine learning techniques now days used to automatically filter the spam e-mail in a phenomenally successful rate. In this paper we presented the most popular machine learning method named as logistic regression and its applicability to the problem of spam Email classification. Further, evaluation of proposed machine learning model is compared to existing K-nearest neighbour (KNN) classifier.

Keywords: Spam detection, E-mail, machine learning, logistic regression.

1. INTRODUCTION

Recently unsolicited commercial / bulk e-mail also known as spam, become a big trouble over the internet. Spam is waste of time, storage space and communication bandwidth. The problem of spam e-mail has been increasing for years. In recent statistics, 40% of all emails are spam which about 15.4 billion email per day and that cost internet users about $355 million per year. Automatic e-mail filtering seems to be the most effective method for countering spam now and a tight competition between spammers and spam-filtering methods is going on. Only several years ago most of the spam could be reliably dealt with by blocking e-mails coming from certain addresses or filtering out messages with certain subject lines. Spammers began to use several tricky methods to overcome the filtering methods like using random sender addresses and/or append random characters to the beginning or the end of the message subject line [11]. Knowledge engineering and machine learning are the two general approaches used in e-mail filtering. In knowledge engineering approach a set of rules must be specified according to which emails are categorized as spam or ham. A set of such rules should be created either by the user of the filter, or by some other authority (e.g. the software company that provides a rule-based spam-filtering tool). By applying this method, no promising results shows because the rules must be constantly updated and maintained, which is a waste of time and it is not convenient for most users. Machine learning approach is more efficient than knowledge engineering approach; it does not require specifying any rules [4]. Instead, a set of training samples, these samples is a set of pre classified e-mail messages. A specific algorithm is then used to learn the classification rules from these e-mail messages. Machine learning approach has been widely studied and there are lots of algorithms can be used in e-mail filtering.

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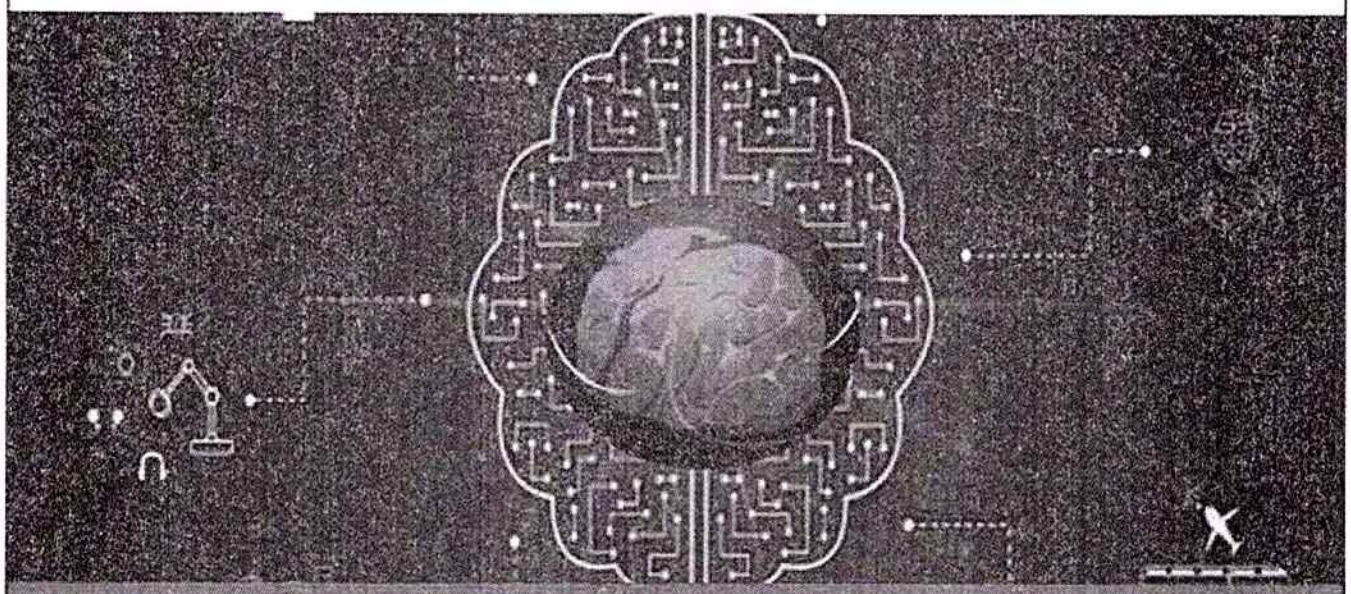

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-

REF. NO	TITLE OF THE PAPER AND AUTHOR(S)	Page No.
	Artificial Intelligence and Its Emerging Areas -NEC-ICAIIA 2K21	
1.	A Data Mining Based Model For Detection Of Deceitful Behaviour In Water Consumption - Tejasri Choudi,B.V.Satish, V.Naga Jyothi, K.Navya	1-5
2	A Machine Learning Framework For Prediction Of Heart Disease, Ramasetty Ramu,Kota Jagadeesh,Chanti Rajamohan Reddy,V. Mahesh Babu	6-10
3	A Supervised Learning Algorithm For Credit Card Fraud Detection, - Guggilam Sai Sri, Gummadilli Gouthami, Potluri Srividya, M. Mamatha	11-15
4	Amazon Product Review Sentiment Analysis Using Machine Learning - Ms Mohammad Arsha Sultana,P. Rakesh, M. Sandeep, G. Jagadeesh	16-20
5	An Interactive Study Of Thyroid Disease Prediction Using Machine Learning - D. Lokesh Gupta, D.Lokesh Gupta, K.V.Narasimha Reddy, D.Ramesh, V.Veerendra	21-25
6	Autoregressive Integrated Moving Average Model For Prediction Of Crypto Currency, - Pokuri Jaya Venkata Naga Sudhakar,Alladi Anil,Avula Venkata Rami Reddy,V. Mahesh Babu	26--29
7	Biometric Identification Scheme With Efficient Privacy-Preserving Mechanism For Cloud Computing Service, - Shaik Ruksana,Bandaru Naga Siva Saisuryatejaswi,Yadavalli Yedukondalu,M Mamatha	30-34
8	Bitcoin Price Prediction -Mrs R.Padmaja,K.V.D Hanisha, B Amulya, M Harika	35-38
9	Calories Burned Prediction, - Niharika Motupalli, B.Siva Kanaka Raju Shaik Mehataj , U. Jhansi Rani, T .Bhavani	39-45
10	Cartoonize Image Using Deep Learning - Gouse Mastan Vali,D.Vamsi Krishna, A.Sairam,K.S.Lakshmi Narayana	46-54
11	Children Speech Recognition Using Machine Learning Methodologies - Dr.T.V.Sai Krishna, R Venkat	55-60

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12	Clarification Of Webbing Through Cloud Computing Technologies - Amara.S.A.L.G.Gopala Gupta.Dr. Gudapati Syam Prasad	61-65
13	Convolutional Lstm Model For Sentiment Analysis On Social Big Data - Raghuveer Pachipulusu.V.Ananth Reddy. R.Sai Kiran. T.Vignesh	66-72
14	Data Preprocessing For Efficient Prediction In Customer Relationship Management. - Patur Ganga. K.Arun	73-78
15	Design And Experimental Study Of Automatic Colour Sorting By A Robotic Arm System - T.Lakshmibai	79-82
16	Detection Of Autism Disorder Based On Eeg Signal Using Deep Learning Methods -Ranjani M.P.Supraja	83-87
17	Detection Of Online Public Shaming With Offensive Content On Twitter. - Gutta Sai Durga.Gopu Sandhya.Jonnalagadda Madhavi. Dr. S.V.N.Srinivasu	88-91
18	Detection Of Phishing Attacks Using Natural Language Processing And Logistic Regression Model. - Surubula Thirupathi Rao.Pothukuchi Mahesh Babu.Rayala Venu.V. Mahesh Babu	92-98
19	Detection Of Social Network Mental Disorders Through Mining Of Online Social Media. - Battula Venkata Ananta Mehar Gopi.Rajarapu Venu Babu.Maddineni Naveen .Dr. S.V.N.Srinivasu	99-103
20	predections in healthy population through machine learning	104-108
21	Diabetics Prediction using Machine Learning Techniques. - Pathan Sajida. S.Amulya . V.Nandhini	109-114
22	DL-CNN Framework For Malicious Social Bots Detection. - Syed Fathima.Ponnapati Mallika.Gandru Akhilendra Chowdary.M. Mamatha	115-120
23	Door Security System Using Face Recognition -Dr A Srinivasa Rao.K.G.J.Prasanth. M. Rama Rao	121-123
24	ECG Classification With Convolutional Neural Networks - S V N Sreenivasu.T Bhargavika.B Anusha .P Jayasri	124-129
25	Emotion Recognition From Multimodal Data(Speech. Video. Text) Based On Deep Learning Techniques D.P.Supraja	130-137

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NARASARAOPETA ENGINEERING COLLEGE
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NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

26	Estimation Of Population Analysis - Tarun.G.Tarun.T.Purnavamsi.K.Vivekreddy	138-142
27	Eye Ball Cursor Movement Using Opencv - B.Preethi.D.Bharadwaja.B.Preethi. K.Charithra Lavanya.N.Sony	143-147
28	Face.Age And Gender Recogntion System Based on Deep Neural Networks - Gudapati Syam Prasad.K.Narendra Babu.N.Hemanth Kumar.K.Sriniivas	148-154
29	Facial Expression Recognition With Convolutional Neural Networks - S. Siva Nageswara Rao,S.Ramya. T.Anantha Lavanya	155-162
30	Fake Currency Detection. - Mr.Sk.K.M.Basha , Yalagala Hema Latha. Gatakala Venkata Sravya Bhavani. Macharla Maitili	163-167
31	Fake News Detection - Gangasani Likitha. I. Navya Sri. D. Swetha	168-175
32	Fake News Detection Using Machine Learning - Srikanth Mylapalli,Mylapalli Ramesh	176-180
33	Forest Fires Detection Using Machine Learning Algorithms - N.S.Sesi Kiran.P. Lakshmi Narayana. Sk. Mastanvali. P. Nivas	181-185
34	Functioning Of Artificial Intelligence In An Self-Driving Vehicle - A Review -Penugonda Surya Teja.None	186-189
35	Generic Recommendation Engine Using Hybrid Filtering Model - G Prabhakara Reddy,O Ramesh. Ch Anil	190-200
36	Head Motion Detection - Dr A Srinivasa Rao.M.Prathyusha. Y.Rajeswari	201-203
37	Heart Disease Prediction Using Machine Learning - Jhansi Lakshmi Manukonda ,R. V. P. S. Rekha, T. Divya. G. L. N. Jayaprada	204-208
38	House Price Prediction - Bodlapati Sowmya Reddy,M. Yamini Priya. P. Manasa	209-213
39	Image Captioning Using Deep Learning - Y E V Pratap Kumar Kuchi.M.Sireesha. G. Sai Akhil. K. Hema Sai Mourya Gupta	214-219

IQAC

Principal
NARASARAOPETA ENGINEERING COLLEGE
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NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

40	Image Classification Using Object Detection With YOLO Algorithm. Shaik Bhadhar Shareef.Putchakayala Ramesh.Angajala Anil.G. Sambasiva Rao	220-223
41	Implementation Of Video Steganography Cryptography System For Iot-Based Cloud Computing Security. - Samvarapu Sagar Reddy.Mallavarapu Nikhil.Chevala Venkatesh.Dr. S.V N Srinivasu	224-228
42	Inform Me-Family Gps Locator - Oruganti Ramesh.G Prabhakara Reddy. Ch. Anil	229-233
43	Ipl Score Prediction Using Machine Learning Methods - Rajyalakshmi Dondapati.N.Likitha.M.Anmisha	234-241
44	Liver Disease Prediction Using Machine Learning Methods - Sravana Sandhya Rani Karnati.K. Sravana Sandhya Rani, B.V.Gayithri.K.Vijayalakshmi	242-249
45	Loan Prediction System - Divya Gopavarapu.K.Manasa.A.Akhila.M.Sireesha	250-255
46	Lung Cancer Prediction - Naga Mallika Gude.M. Navya Sri, B. Sukanya	256-263
47	Map Reduced Segmentation Clustering For Big Data Analytics Using Extended K-Mean Clustering Technique - Mvs.Prasad	264-270
48	Mask R-Cnn For Fire Detection - Razeena Begum Shaik.S Yogananda Datta , M S V Manoj	271-276
49	Melanoma Prediction Using Deep Learning - Aishwarya Nallapati.D. Jaya Tejaswini, J. Prashanthi, T. Siri Chandana	277-280
50	Multilevel Hierarchy Based Privacy Preserved Profile Publishing In Cloud Environment. - Esthala Abhishek.Kambhampati Adinarayana.Battula Ramesh.G. Sambasiva Rao	281-286
51	Music Recommendation Application Based On Facial Expressions - Ms Mohammad Arsha Sultana.Abdul Saherabegum, Akhila Umma, Guthula Jayasri Sai Nikitha	287-290
52	Mutual Fund Prediction Using Machine Learning - Shaik Nannu Saidavali.N.Vinay Chandra Pal, K.Bhaskar Reddy	291-295
53	Network Coding Techniques To Store The Data Securely In Cloud. - Guru Brahmam Madala, Vijay Anand R	296-301
54	Network Spam And Fake User Detection In Online Social Networks Using Support Vector Machine. - Majeti Pavan Kalyan.Anchula Sreekanth.Ravi Mahesh Babu.G. Sambasiva Rao	302-307
55	Next Word Prediction Using Recurrent Neural Networks - Srikanth Kolisetty.B. Venkateswarlu, S. Siva Sai Kumar, T. Uday Kumar	308-313

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56	Nobel Methodologies For Immigration Of Service Oriented Architecture Based Applications To Microservice Architecture - M Madhu Sudhan, P Indupriyankaray, Aelluri Lakshmi, M Sreenandan Reddy	314-317
57	Plant Leaf Disease Detection System Using Resnet-50 - Chappa.Ramya Sai.K.Kavya.K.Meghana.A.Tulasi	318-321
58	Predicting The Survival Of Patients With Heart Failure-Machine Learning Methods - Hemalatha Tatiparthi,G.Mounika.K.Prasanthi.G.Hemavani	322-329
59	Prediction Of Agriculture Yields Using Machine Learning Algorithms. - Katepalli Sai Sravanthi,Grandhisila Venkatanagalakshmipravallika,Kollipara Harika ,M. Mamatha	330-335
60	Prediction Of Covid 19 Epidemics Using Data Analytics - S.Anil Kumar,G.Sathar	336-343
61	Prediction Of Covid Readmissions Using Machine Learning - Athukuri Lakshmi Narendra Kumar,B.V.V.N.Sai Kumar	344-347
62	Rainfall Prediction Using Machine Learning - Anusha Bhavanam,Ch. Vyshnavi, Ch.Priyanka	348-353
63	Review On Load Balancing Using Cloud Computing - J Raghunath ,A Chandra Sekhar, Shaik Razia, D Venkatesh	354-362
64	Road Safety And Vehicle Accident Prevention - G.Gayatri,G.Gayatri,K.Sugunitha	363-367
65	Sensile Soil Analyzing Application - Mathi Raasi,G.Santhi Sri,M Sravya,Shaik Khaja Mohiddin Basha	368-373
66	Sentiment Analysis Of Movie Reviews Using Ml -Mukunda Gagula,Lakshma Reddy,Sai Venkatesh,Shaik Rafi	374-377
67	Supevised Learning Models for perception of Multi-Trafic Scene	378-383
68	Smart Parking System Using Web Application. - K Razeena Begum, S Anand, K Vivek, K Manideep	384-387

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Detection of Social Network Mental Disorders Through Mining of Online Social Media

BATTULA VENKATA ANANTA MEHAR GOPI[1], RAJARAPU VENU BABU[2], MADDINENI NAVEEN[3], Dr. S.V.N.SRINIVASU[4]

mehargopi333@gmail.com[1], rajarapuvenu8@gmail.com[2], maddineninaveen43@gmail.com[3], drsvnsrinivasu@gmail.com[4]

[1,2,3]student,Department of MCA, Narasaraopeta Engineering College, [4]Professor, Department of MCA, Narasaraopeta Engineering College

ABSTRACT

The explosive growth in popularity of social networking leads to the problematic usage. An increasing number of social network mental disorders (SNMDs), such as Cyber-Relationship Addiction, Information Overload, and Net Compulsion, have been recently noted. Symptoms of these mental disorders are usually observed passively today, resulting in delayed clinical intervention. In this paper, we argue that mining online social behavior provides an opportunity to actively identify SNMDs at an early stage. Itis challenging to detect SNMDs because the mental status cannot be directly observed from online social activity logs. Our approach, new and innovative to the practice of SNMD detection, does not rely on self-revealing of those mental factors via questionnaires in Psychology. Instead, we propose a machine learning framework, namely, logistic regression model (LRM), that exploits features extracted from social network data to accurately identify potential cases of SNMDs. We also exploit the comparative evaluation with K-nearest neighbour (KNN) classifier.

Keywords: machine learning, social network mental disorder, KNN classifier, logistic regression model.

1. INTRODUCTION

With the explosive growth in popularity of social networking and messaging apps, online social networks (OSNs) have become a part of many people's daily lives. Most research on social network mining focuses on discovering the knowledge behind the data for improving people's life. While OSNs seemingly expand their users' capability in increasing social contacts, they may decrease the face-to-face interpersonal interactions in the real world. Due to the epidemic scale of these phenomena, new terms such as Phubbing (Phone Snubbing) and Nomophobia (No Mobile Phone Phobia) have been created to describe those who cannot stop using mobile social networking apps. In fact, some social network mental disorders (SNMDs), such as Information Overload and Net Compulsion [1], have been recently noted. For example, studies point out that 1 in 8 Americans suffer from problematic Internet use. Moreover, leading journals in mental health, such as the American Journal of Psychiatry [2], have reported that the SNMDs may incur excessive use, depression, social withdrawal, and a range of other negative repercussions. Indeed, these symptoms are important components of diagnostic criteria for SNMDs [3] e.g., excessive use of social networking apps – usually associated with a loss of the sense of time or a neglect of basic drives, and withdrawal – including feelings of anger, tension, and/or depression when the computer/apps are inaccessible. SNMDs are social-oriented and tend to happen to users who usually interact with others via online social media. Those with SNMDs usually lack offline interactions, and as a result seek cyber-relationships to compensate. Today, identification of potential mental disorders often falls on the shoulders of supervisors (such as teachers or parents) passively. However, since there are very few notable physical risk factors, the patients usually do not actively seek medical or psychological services. Therefore, patients would only seek clinical interventions when their conditions become very severe. However, a recent study shows a strong correlation between suicidal attempt and SNMDs [4], which indicates that adolescents suffering from social network addictions have a much higher risk of suicidal inclination than non-addictive users. The research also reveals that social network addiction may negatively impact emotional status, causing higher hostility, depressive mood, and compulsive behavior. Even more alarming is that the delay of early intervention may seriously damage individuals' social functioning. In short, it is desirable to have the ability to actively detect potential SNMD users on OSNs at an early stage. Although previous work in Psychology has identified several crucial mental factors related to SNMDs, they are mostly examined as standard diagnostic criteria in survey questionnaires. To automatically detect potential SNMD cases of OSN users, extracting these factors to assess users' online mental states is incredibly challenging. For

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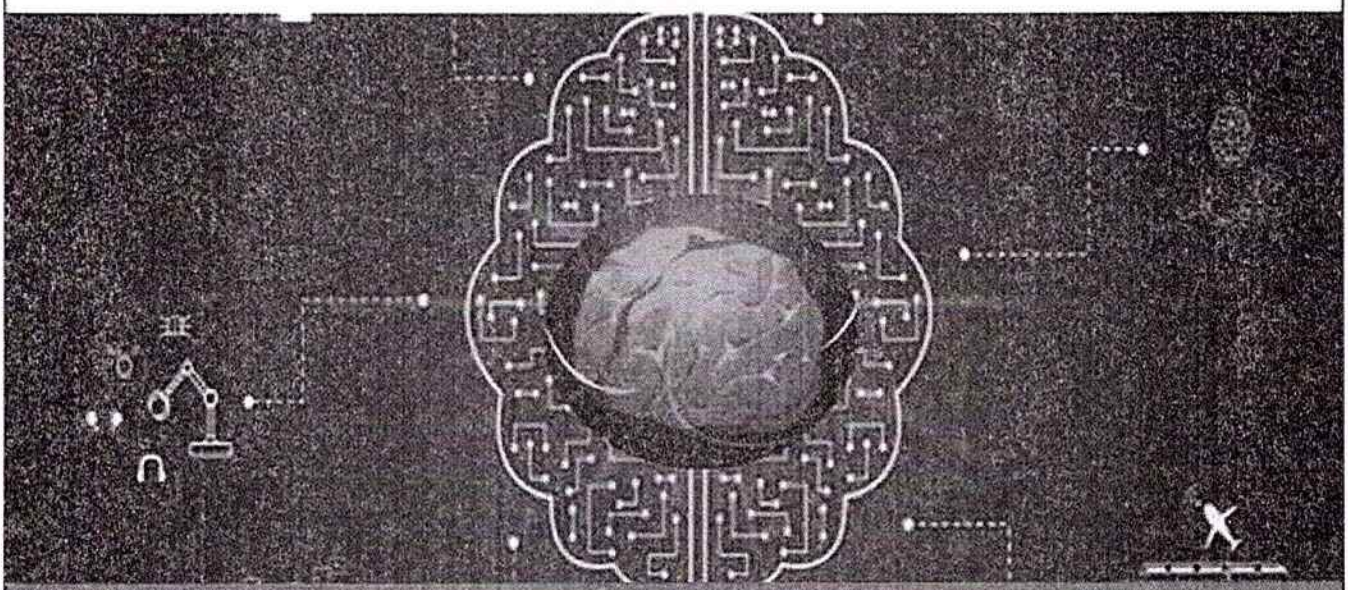

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1.	A Data Mining Based Model For Detection Of Deceitful Behaviour In Water Consumption - Tejasri Choudi,B.V.Satish, V.Naga Jyothi, K.Navya	1-5
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20	predections in healthy population through machine learning	104-108
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NARASARAOPET - 522 601.
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26	Estimation Of Population Analysis - Tarun.G.Tarun.T.Purnavamsi.K.Vivekreddy	138-142
27	Eye Ball Cursor Movement Using Opencv - B.Preethi.D.Bharadwaja.B.Preethi. K.Charithra Lavanya.N.Sony	143-147
28	Face.Age And Gender Recogntion System Based on Deep Neural Networks - Gudapati Syam Prasad.K.Narendra Babu.N.Hemanth Kumar.K.Sriniivas	148-154
29	Facial Expression Recognition With Convolutional Neural Networks - S. Siva Nageswara Rao.S.Ramya. T.Anantha Lavanya	155-162
30	Fake Currency Detection. - Mr.Sk.K.M.Basha , Yalagala Hema Latha. Gatakala Venkata Sravya Bhavani. Macharla Maitili	163-167
31	Fake News Detection - Gangasani Likitha. I. Navya Sri. D. Swetha	168-175
32	Fake News Detection Using Machine Learning - Srikanth Mylapalli.Mylapalli Ramesh	176-180
33	Forest Fires Detection Using Machine Learning Algorithms - N.S.Sesi Kiran.P. Lakshmi Narayana. Sk. Mastanvali. P. Nivas	181-185
34	Functioning Of Artificial Intelligence In An Self-Driving Vehicle - A Review -Penugonda Surya Teja.None	186-189
35	Generic Recommendation Engine Using Hybrid Filtering Model - G Prabhakara Reddy,O Ramesh. Ch Anil	190-200
36	Head Motion Detection - Dr A Srinivasa Rao.M.Prathyusha. Y.Rajeswari	201-203
37	Heart Disease Prediction Using Machine Learning - Jhansi Lakshmi Manukonda ,R. V. P. S. Rekha. T. Divya. G. L. N. Jayaprada	204-208
38	House Price Prediction - Bodlapati Sowmya Reddy.M. Yamini Priya. P. Manasa	209-213
39	Image Captioning Using Deep Learning - Y E V Pratap Kumar Kuchi.M.Sireesha. G. Sai Akhil. K. Hema Sai Mourya Gupta	214-219

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Guntur (Dist.), A.P.

40	Image Classification Using Object Detection With YOLO Algorithm. Shaik Bhadhar Shareef.Putchakayala Ramesh.Angajala Anil.G. Sambasiva Rao	220-223
41	Implementation Of Video Steganography Cryptography System For Iot-Based Cloud Computing Security. - Santvarapu Sagar Reddy.Mallavarapu Nikhil.Chevala Venkatesh.Dr. S.V.N Srinivasu	224-228
42	Inform Me-Family Gps Locator - Oruganti Ramesh.G Prabhakara Reddy. Ch. Anil	229-233
43	Ipl Score Prediction Using Machine Learning Methods - Rajyalakshmi Dondapati.N.Likitha.M.Anmisha	234-241
44	Liver Disease Prediction Using Machine Learning Methods - Sravana Sandhya Rani Karnati.K. Sravana Sandhya Rani, B.V.Gayithri.K.Vijayalakshmi	242-249
45	Loan Prediction System - Divya Gopavarapu.K.Manasa.A.Akhila.M.Sireesha	250-255
46	Lung Cancer Prediction - Naga Mallika Gude.M. Navya Sri. B. Sukanya	256-263
47	Map Reduced Segmentation Clustering For Big Data Analytics Using Extended K-Mean Clustering Technique - Mvs.Prasad	264-270
48	Mask R-Cnn For Fire Detection - Razeena Begum Shaik.S Yogananda Datta . M S V Manoj	271-276
49	Melanoma Prediction Using Deep Learning - Aishwarya Nallapati.D. Jaya Tejaswini. J. Prashanthi. T. Siri Chandana	277-280
50	Multilevel Hierarchy Based Privacy Preserved Profile Publishing In Cloud Environment. - Esthala Abhishek.Kambhampati Adinarayana.Battula Ramesh.G. Sambasiva Rao	281-286
51	Music Recommendation Application Based On Facial Expressions - Ms Mohammad Arsha Sultana.Abdul Saherabegum. Akhila Umma. Guthula Jayasri Sai Nikitha	287-290
52	Mutual Fund Prediction Using Machine Learning - Shaik Nannu Saidavali.N.Vinay Chandra Pal. K.Bhaskar Reddy	291-295
53	Network Coding Techniques To Store The Data Securely In Cloud. - Guru Brahmam Madala. Vijay Anand R	296-301
54	Network Spam And Fake User Detection In Online Social Networks Using Support Vector Machine. - Majeti Pavan Kalyan.Anchula Sreekanth.Ravi Mahesh Babu.G. Sambasiva Rao	302-307
55	Next Word Prediction Using Recurrent Neural Networks - Srikanth Kolisetty.B. Venkateswarlu. S. Siva Sai Kumar. T. Uday Kumar	308-313

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56	Nobel Methodologies For Immigration Of Service Oriented Architecture Based Applications To Microservice Architecture - M Madhu Sudhan, P Indupriyankaray, Aelluri Lakshmi, M Sreenandan Reddy	314-317
57	Plant Leaf Disease Detection System Using Resnet-50 - Chappa.Ramya Sai,K.Kavya,K.Meghana,A.Tulasi	318-321
58	Predicting The Survival Of Patients With Heart Failure-Machine Learning Methods - Hemalatha Tatiparthi,G.Mounika,K.Prasanthi,G.Hemavani	322-329
59	Prediction Of Agriculture Yields Using Machine Learning Algorithms. - Katepalli Sai Sravanthi,Grandhisila Venkatanagalakshmipravallika,Kollipara Harika ,M. Mamatha	330-335
60	Prediction Of Covid 19 Epidemics Using Data Analytics - S.Anil Kumar,G.Sathar	336-343
61	Prediction Of Covid Readmissions Using Machine Learning - Athukuri Lakshmi Narendra Kumar,B.V.V.N.Sai Kumar	344-347
62	Rainfall Prediction Using Machine Learning - Anusha Bhavanam,Ch. Vyshnavi, Ch.Priyanka	348-353
63	Review On Load Balancing Using Cloud Computing - J Raghunath ,A Chandra Sekhar, Shaik Razia, D Venkatesh	354-362
64	Road Safety And Vehicle Accident Prevention - G.Gayatri,G.Gayatri,K.Sugunitha	363-367
65	Sensile Soil Analyzing Application - Mathi Raasi,G.Santhi Sri,M Sravya,Shaik Khaja Mohiddin Basha	368-373
66	Sentiment Analysis Of Movie Reviews Using Ml -Mukunda Gagula,Lakshma Reddy,Sai Venkatesh,Shaik Rafi	374-377
67	Supevised Learning Models for perception of Multi-Trafic Scene	378-383
68	Smart Parking System Using Web Application, - K Razeena Begum, S Anand, K Vivek, K Manideep	384-387

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70	Stock Value Prediction Using Regression - B.Jhansi Vazram. G.Venkatrao. D.Srtinivasa Reddy. V.Ashok Kumar	399-404
71	Summarized Reviews With Attention Mechanism Using Lstm - Tahfeem Shaik.Sirajuddin.Shaikrafi	405-408
72	Supervised Learning For Fraud And Malware Detection From Android Applications. - Tunuguntla Bala Bhaskar Rao .Dronadula Narendra. Maddu Phanindra Kumar.Dr. S.V.N.Srinivasu	409-415
73	Trust-Based Privacy Preserving Photo Sharing In Online Social Networks - Mrs R.Padmaja.Sk.Shahnoor. N.Nikhila. L.Thanusha	416-419
74	Useableness And Applications Of Blockchain Technology In Cloud Computing Environment - D Venkatesh.M Vijaya Bhaskar. J Raghunath. D Raghava Raju	420-426
75	Weather Prediction - Kotha Tharun Teja.G.Ashok.K.Raviteja.N.Raviteja	427-431
76	Wholesale And Retail Store Management System - Mr K Siva Rama Krishna.Saranya Bala.Y .Triveni.V . Sai Divya	432-435

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CSE 204

ECG Classification with Convolutional Neural Networks

[1]Dr S V N Sreenivasu [2] T Bhargavika [3] B Anusha [4]P JayaSri

[1]*Professor, Narasaraopeta Engineering College, Narasaraopet, India*

[2,3,4]*B.Tech Student, Department of Computer Science and Engineering,Narasaraopeta Engineering College, Narasaraopet, Guntur Dist, A.P*

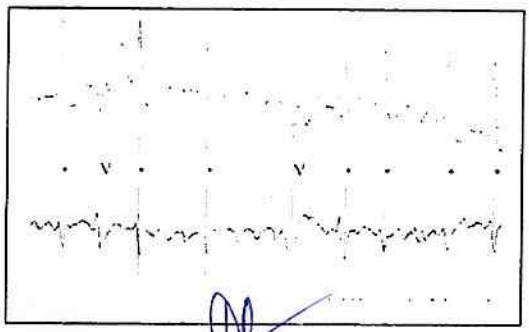
[1]*drsvnsrinivasu@gmail.com*

[2,3,4]bhargavikatammana@gmail.com, anushabhavanam26@gmail.com,pjayasri8@gmail.com

Abstract: Cardiovascular diseases (CVDs) are the leading cause of death today. The current identification method of the diseases is analysing the Electrocardiogram (ECG), which is a medical monitoring technology recording cardiac activity. Unfortunately, looking for experts to analyse a large amount of ECG data consumes too many medical resources. Therefore, the method of identifying ECG characteristics based on machine learning has gradually become prevalent

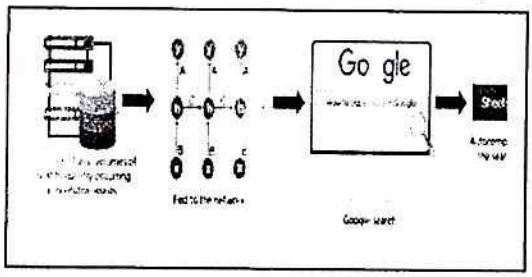
I INTRODUCTION

The electrocardiogram (ECG) has become a useful tool for the diagnosis of cardiovascular diseases as it is fast and non invasive. It has been reported that about 80% of sudden cardiac deaths are the result of ventricular arrhythmias or irregular heartbeats. While an experienced cardiologist can easily distinguish arrhythmias by visually referencing the morphological pattern of the ECG signals, a computer- oriented approach can effectively reduce the diagnostic time and would enable the e-home health monitoring of cardiovascular disease. However, realizing such computer-oriented approaches remains challenging due to the time-varying dynamics and various profiles of ECG signals, which cause the classification precision to vary from patient to patient, as even for a healthy person, the morphological pattern of their ECG signals can vary significantly over a short time.



II LITERATURE SURVEY

Deep learning is a class of machine learning algorithms that uses multiple layers to progressively extract higher-level features from the raw input. For example Convolutional neural networks (CNN) are useful tools that have been used in pattern recognition applications ,such as the classification of handwriting and object recognition in large archives. Some machine learning methods Deep learning algorithms are often categorized as Recurrent Neural Networks, Long Short Term Memory Networks, Convolutional Neural Networks, Radial Basis Function Networks .Recurrent Neural Networks (RNNs) is a class of artificial neural networks where connections between nodes form a directed graph along a temporal sequence. This allows it to exhibit temporal dynamic behavior. Derived from feedforward neural networks, RNNs can use their internal state (memory) to process variable length sequences of inputs. Here is an example of how Google's autocompleting feature works:



Long Short Term Memory Networks (LSTMs) is an artificial recurrent neural network (RNN) architecture used in the field of deep learning. LSTM networks are well-suited to classifying, processing and making predictions based on time series data, since there can be lags of unknown duration between important events in a time series.

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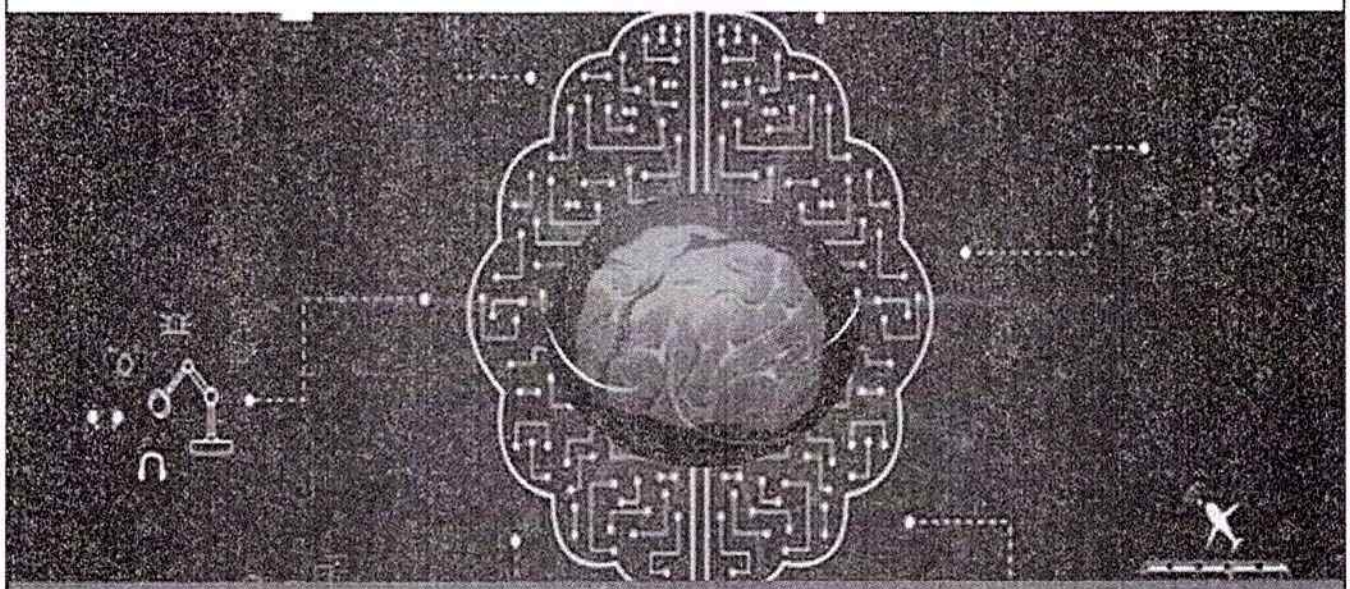

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International Conference On

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-

REF. NO	TITLE OF THE PAPER AND AUTHOR(S)	Page No.
	Artificial Intelligence and Its Emerging Areas -NEC-ICAIIA 2K21	
1.	A Data Mining Based Model For Detection Of Deceitful Behaviour In Water Consumption - Tejasri Choudi,B.V.Satish, V.Naga Jyothi, K.Navya	1-5
2	A Machine Learning Framework For Prediction Of Heart Disease, Ramasetty Ramu,Kota Jagadeesh,Chanti Rajamohan Reddy,V. Mahesh Babu	6-10
3	A Supervised Learning Algorithm For Credit Card Fraud Detection, - Guggilam Sai Sri, Gummadilli Gouthami, Potluri Srividya, M. Mamatha	11-15
4	Amazon Product Review Sentiment Analysis Using Machine Learning - Ms Mohammad Arsha Sultana,P. Rakesh, M. Sandeep, G. Jagadeesh	16-20
5	An Interactive Study Of Thyroid Disease Prediction Using Machine Learning - D. Lokesh Gupta, D.Lokesh Gupta, K.V.Narasimha Reddy, D.Ramesh, V.Veerendra	21-25
6	Autoregressive Integrated Moving Average Model For Prediction Of Crypto Currency, - Pokuri Jaya Venkata Naga Sudhakar,Alladi Anil,Avula Venkata Rami Reddy,V. Mahesh Babu	26--29
7	Biometric Identification Scheme With Efficient Privacy-Preserving Mechanism For Cloud Computing Service, - Shaik Ruksana,Bandaru Naga Siva Saisuryatejaswi,Yadavalli Yedukondalu,M Mamatha	30-34
8	Bitcoin Price Prediction -Mrs R.Padmaja,K.V.D Hanisha, B Amulya, M Harika	35-38
9	Calories Burned Prediction, - Niharika Motupalli, B.Siva Kanaka Raju Shaik Mehataj , U. Jhansi Rani, T .Bhavani	39-45
10	Cartoonize Image Using Deep Learning - Gouse Mastan Vali,D.Vamsi Krishna, A.Sairam,K.S.Lakshmi Narayana	46-54
11	Children Speech Recognition Using Machine Learning Methodologies - Dr.T.V.Sai Krishna, R Venkat	55-60

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12	Clarification Of Webbing Through Cloud Computing Technologies - Amara.S.A.L.G.Gopala Gupta,Dr. Gudapati Syam Prasad	61-65
13	Convolutional Lstm Model For Sentiment Analysis On Social Big Data - Raghuveer Pachipulusu,V.Ananth Reddy, R.Sai Kiran, T.Vignesh	66-72
14	Data Preprocessing For Efficient Prediction In Customer Relationship Management, - Patur Ganga, K.Arun	73-78
15	Design And Experimental Study Of Automatic Colour Sorting By A Robotic Arm System - T.Lakshmibai	79-82
16	Detection Of Autism Disorder Based On Eeg Signal Using Deep Learning Methods -Ranjani M.P.Supraja	83-87
17	Detection Of Online Public Shaming With Offensive Content On Twitter, - Gutta Sai Durga,Gopu Sandhya,Jonnalagadda Madhavi, Dr. S.V.N.Srinivasu	88-91
18	Detection Of Phishing Attacks Using Natural Language Processing And Logistic Regression Model, - Surubula Thirupathi Rao,Pothukuchi Mahesh Babu,Rayala Venu,V. Mahesh Babu	92-98
19	Detection Of Social Network Mental Disorders Through Mining Of Online Social Media, - Battula Venkata Ananta Mehar Gopi,Rajarapu Venu Babu,Maddineni Naveen ,Dr. S.V.N.Srinivasu	99-103
20	predections in healthy population through machine learning	104-108
21	Diabetics Prediction using Machine Learning Techniques, - Pathan Sajida, S.Amulya , V.Nandhini	109-114
22	DL-CNN Framework For Malicious Social Bots Detection, - Syed Fathima,Ponnapati Mallika,Gandru Akhilendra Chowdary,M. Mamatha	115-120
23	Door Security System Using Face Recognition -Dr A Srinivasa Rao,K.G.J.Prasanth, M. Rama Rao	121-123
24	ECG Classification With Convolutional Neural Networks - S V N Sreenivasu,T Bhargavika,B Anusha ,P Jayasri	124-129
25	Emotion Recognition From Multimodal Data(Speech, Video, Text) Based On Deep Learning Techniques D.P.Supraja	130-137

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26	Estimation Of Population Analysis - Tarun.G.Tarun.T.Purnavamsi.K.Vivekreddy	138-142
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38	House Price Prediction - Bodlapati Sowmya Reddy.M. Yamini Priya. P. Manasa	209-213
39	Image Captioning Using Deep Learning - Y E V Pratap Kumar Kuchi.M.Sireesha. G. Sai Akhil. K. Hema Sai Mourya Gupta	214-219

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60	Prediction Of Covid 19 Epidemics Using Data Analytics - S.Anil Kumar.G.Sathar	336-343
61	Prediction Of Covid Readmissions Using Machine Learning - Athukuri Lakshmi Narendra Kumar.B.V.V.N.Sai Kumar	344-347
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65	Sensile Soil Analyzing Application - Mathi Raasi,G.Santhi Sri.M Sravya.Shaik Khaja Mohiddin Basha	368-373
66	Sentiment Analysis Of Movie Reviews Using Ml -Mukunda Gagula.Lakshma Reddy.Sai Venkatesh.Shaik Rafi	374-377
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74	Useableness And Applications Of Blockchain Technology In Cloud Computing Environment - D Venkatesh,M Vijaya Bhaskar. J Raghunath. D Raghava Raju	420-426
75	Weather Prediction - Kotha Tharun Teja,G.Ashok,K.Raviteja,N.Raviteja	427-431
76	Wholesale And Retail Store Management System - Mr K Siva Rama Krishna,Saranya Bala.Y ,Triveni.V . Sai Divya	432-435

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CSE 2021

Face, Age & Gender Recognition System Based on Deep Neural Networks

[1]Dr. G. Syam Prasad, B.Tech., M.Tech., Ph.D

Professor of CSE, Narasaraopeta Engineering College, Narasaraopet, India

Syamprasad.gudapati@gmail.com

[2]Kalluri Narendra Babu

Narendrakalluri125@gmail.com

[3]Nalamothu Hemanth Kumar

Nalamothuhemanth1998@gmail.com

[4]Kollipaka Srinivas

Srinivaskollipaka1310@gmail.com

Abstract - In the existing research, face features and gender attributes are separated, resulting in face recognition errors, age and gender recognition errors in complex backgrounds. In this work, we propose the Face and Gender Recognition System that uses Deep neural networks(DNN). This system has two parts : one is face recognition module and the other is gender recognition module. Both face recognition module and gender recognition module use pre-trained DNN to extract face and gender features in the image. Specifically, in the face recognition module, we use the public datasets Labeled Faces in the Wild (LFW), YouTube Face (YTF) and VGGFace2 to train DNN, which improves the precision. In the gender recognition module, we use the public dataset Audience to train DNN and improve the best recognition accuracy from 91.80% to 93.22%

Index Terms - face recognition; gender recognition; DNN

I. INTRODUCTION

Using deep neural networks to learn effective feature representations has become popular in face recognition [3, 9, [illegible], [illegible], [illegible], [illegible], [illegible], 10, [illegible]]. With better deep network architecture and progressive methods, face recognition accuracy has been increased rapidly in recent years. In particular, a few noticeable face representation learning techniques are evolved recently. An early effort of learning deep face representation in a supervised way was to employ face verification as the supervisory signal [ ], which required classifying a pair of training images as being the same person or not. It greatly decreased the intra-personal variations present in the face representation. Then learning discriminative deep face representation through large-scale face identity classification (face identification) was proposed by DeepID [ ] and DeepFace [,]. By classifying the training images into a large set of identities, the final secret layer of deep neural networks would form rich identity-related features. With this technique, deep learning got close to human performance for the first time on tightly cropped face images of the extensively evaluated LFW face verification dataset [2]. However, the learnt face representation can contain significant intra- personal variations of age and gender prediction. Motivated by both [ ] and [ ], an approach of learning deep face representation by joint face identification-verification was proposed in DeepID2 [ ] and was further improved in DeepID2+ [6]. Adding verification supervisory signals significantly reduced intra-personal variations, leading to another significant improvement on face recognition performance. Human face verification accuracy on the entire face images of LFW was surpassed finally [4, 6]. Both GoogLeNet [7] and VGG [1] ranked in the top in general image classification in ILSVRC 2014. This encourages us to investigate whether the superb learning capacity brought by very deep net structures can benefit face recognition techniques.

Automated facial recognition and estimation of gender and age using machine learning models has held a high level of attention for more than two decades [2, 7, 4] and has become more relevant due to the abundance of face images on the web, and mainly on social media platforms. The introduction of DNN models to this domain has strongly replaced the actual need for hand crafted facial descriptors and data preprocessing techniques increased most of the possible prediction performances at an incredible rate. DNN models have been used not only for successfully applying for age and gender recognition, but also for the classification of emotional states. In the previous three years alone, age recognition rates increased from 45.1% [8] to 64% and gender recognition rates from 77.8% to reportedly 91% on the recent and challenging Audience benchmark mirroring the overall progress on other available benchmarks such as the Images of Groups data set [3], the LFW data set [9] or the Gallagher Collection Person data set.

Next to the indisputable performance gains across the board, the probably most important factor for the popularity of DNN architectures is the low entry barrier provided by intuitive and generic (layer) building blocks.

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NEC-ICAIEA-2K21

16th & 17th July, 2021

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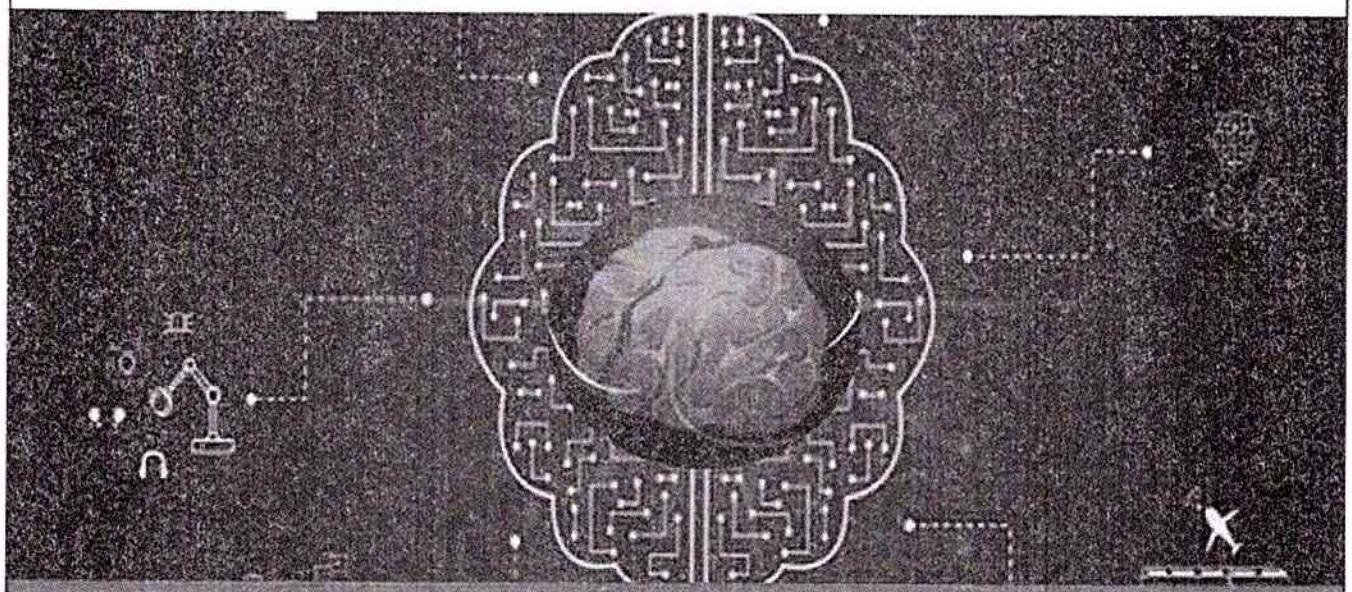

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-

REF. NO	TITLE OF THE PAPER AND AUTHOR(S)	Page No.
	Artificial Intelligence and Its Emerging Areas -NEC-ICAIIA 2K21	
1.	A Data Mining Based Model For Detection Of Deceitful Behaviour In Water Consumption - Tejasri Choudi,B.V.Satish, V.Naga Jyothi, K.Navya	1-5
2	A Machine Learning Framework For Prediction Of Heart Disease. Ramasetty Ramu,Kota Jagadeesh,Chanti Rajamohan Reddy,V. Mahesh Babu	6-10
3	A Supervised Learning Algorithm For Credit Card Fraud Detection. - Guggilam Sai Sri, Gummadilli Gouthami, Potluri Srividya, M. Mamatha	11-15
4	Amazon Product Review Sentiment Analysis Using Machine Learning - Ms Mohammad Arsha Sultana,P. Rakesh, M. Sandeep, G. Jagadeesh	16-20
5	An Interactive Study Of Thyroid Disease Prediction Using Machine Learning - D. Lokesh Gupta, D.Lokesh Gupta, K.V.Narasimha Reddy, D.Ramesh, V.Veerendra	21-25
6	Autoregressive Integrated Moving Average Model For Prediction Of Crypto Currency. - Pokuri Jaya Venkata Naga Sudhakar,Alladi Anil,Avula Venkata Rami Reddy,V. Mahesh Babu	26--29
7	Biometric Identification Scheme With Efficient Privacy-Preserving Mechanism For Cloud Computing Service. - Shaik Ruksana,Bandaru Naga Siva Saisuryatejaswi,Yadavalli Yedukondalu,M. Mamatha	30-34
8	Bitcoin Price Prediction -Mrs R.Padmaja,K.V.D Hanisha, B Amulya, M Harika	35-38
9	Calories Burned Prediction. - Niharika Motupalli, B.Siva Kanaka Raju Shaik Mehataj , U. Jhansi Rani, T .Bhavani	39-45
10	Cartoonize Image Using Deep Learning - Gouse Mastan Vali,D.Vamsi Krishna, A.Sairam,K.S.Lakshmi Narayana	46-54
11	Children Speech Recognition Using Machine Learning Methodologies - Dr.T.V.Sai Krishna, R Venkat	55-60

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12	Clarification Of Webbing Through Cloud Computing Technologies - Amara.S.A.L.G.Gopala Gupta.Dr. Gudapati Syam Prasad	61-65
13	Convolutional Lstm Model For Sentiment Analysis On Social Big Data - Raghuveer Pachipulusu.V.Ananth Reddy. R.Sai Kiran. T.Vignesh	66-72
14	Data Preprocessing For Efficient Prediction In Customer Relationship Management. - Patur Ganga. K.Arun	73-78
15	Design And Experimental Study Of Automatic Colour Sorting By A Robotic Arm System - T.Lakshmibai	79-82
16	Detection Of Autism Disorder Based On Eeg Signal Using Deep Learning Methods -Ranjani M.P.Supraja	83-87
17	Detection Of Online Public Shaming With Offensive Content On Twitter. - Gutta Sai Durga.Gopu Sandhya.Jonnalagadda Madhavi. Dr. S.V.N.Srinivasu	88-91
18	Detection Of Phishing Attacks Using Natural Language Processing And Logistic Regression Model. - Surubula Thirupathi Rao.Pothukuchi Mahesh Babu.Rayala Venu.V. Mahesh Babu	92-98
19	Detection Of Social Network Mental Disorders Through Mining Of Online Social Media. - Battula Venkata Ananta Mehar Gopi.Rajarapu Venu Babu.Maddineni Naveen .Dr. S.V.N.Srinivasu	99-103
20	predections in healthy population through machine learning	104-108
21	Diabetics Prediction using Machine Learning Techniques. - Pathan Sajida. S.Amulya , V.Nandhini	109-114
22	DL-CNN Framework For Malicious Social Bots Detection. - Syed Fathima.Ponnapati Mallika.Gandru Akhilendra Chowdary.M. Mamatha	115-120
23	Door Security System Using Face Recognition -Dr A Srinivasa Rao.K.G.J.Prasanth. M. Rama Rao	121-123
24	ECG Classification With Convolutional Neural Networks - S V N Sreenivasu.T Bhargavika.B Anusha .P Jayasri	124-129
25	Emotion Recognition From Multimodal Data(Speech. Video. Text) Based On Deep Learning Techniques D.P.Supraja	130-137

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26	Estimation Of Population Analysis - Tarun.G.Tarun.T.Purnavamsi.K.Vivekreddy	138-142
27	Eye Ball Cursor Movement Using Opencv - B.Preethi.D.Bharadwaja.B.Preethi. K.Charithra Lavanya.N.Sony	143-147
28	Face.Age And Gender Recogntion System Based on Deep Neural Networks - Gudapati Syam Prasad.K.Narendra Babu.N.Hemanth Kumar.K.Sriniivas	148-154
29	Facial Expression Recognition With Convolutional Neural Networks - S. Siva Nageswara Rao.S.Ramya. T.Anantha Lavanya	155-162
30	Fake Currency Detection. - Mr.Sk.K.M.Basha , Yalagala Hema Latha. Gatakala Venkata Sravya Bhavani. Macharla Maitili	163-167
31	Fake News Detection - Gangasani Likitha. I. Navya Sri. D. Swetha	168-175
32	Fake News Detection Using Machine Learning - Srikanth Mylapalli.Mylapalli Ramesh	176-180
33	Forest Fires Detection Using Machine Learning Algorithms - N.S.Sesi Kiran.P. Lakshmi Narayana. Sk. Mastanvali. P. Nivas	181-185
34	Functioning Of Artificial Intelligence In An Self-Driving Vehicle - A Review -Penugonda Surya Teja.None	186-189
35	Generic Recommendation Engine Using Hybrid Filtering Model - G Prabhakara Reddy,O Ramesh. Ch Anil	190-200
36	Head Motion Detection - Dr A Srinivasa Rao.M.Prathyusha. Y.Rajeswari	201-203
37	Heart Disease Prediction Using Machine Learning - Jhansi Lakshmi Manukonda ,R. V. P. S. Rekha. T. Divya. G. L. N. Jayaprada	204-208
38	House Price Prediction - Bodlapati Sowmya Reddy,M. Yamini Priya. P. Manasa	209-213
39	Image Captioning Using Deep Learning - Y E V Pratap Kumar Kuchi.M.Sireesha. G. Sai Akhil. K.Hema Sai Mourya Gupta	214-219

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40	Image Classification Using Object Detection With YOLO Algorithm. Shaik Bhadhar Shareef,Putchakayala Ramesh,Angajala Anil,G. Sambasiva Rao	220-223
41	Implementation Of Video Steganography Cryptography System For Iot-Based Cloud Computing Security. - Santvarapu Sagar Reddy,Mallavarapu Nikhil,Chevala Venkatesh,Dr. S.V.N.Srinivasu	224-228
42	Inform Me-Family Gps Locator - Oruganti Ramesh,G Prabhakara Reddy, Ch. Anil	229-233
43	Ipl Score Prediction Using Machine Learning Methods - Rajyalakshmi Dondapati,N.Likitha,M.Anmisha	234-241
44	Liver Disease Prediction Using Machine Learning Methods - Sravana Sandhya Rani Karnati,K. Sravana Sandhya Rani, B.V.Gayithri,K.Vijayalakshmi	242-249
45	Loan Prediction System - Divya Gopavarapu,K.Manasa,A.Akhila,M.Sireesha	250-255
46	Lung Cancer Prediction - Naga Mallika Gude,M. Navya Sri, B. Sukanya	256-263
47	Map Reduced Segmentation Clustering For Big Data Analytics Using Extended K-Mean Clustering Technique - Mvs.Prasad	264-270
48	Mask R-Cnn For Fire Detection - Razeena Begum Shaik,S Yogananda Datta , M S V Manoj	271-276
49	Melanoma Prediction Using Deep Learning - Aishwarya Nallapati,D. Jaya Tejaswini, J. Prashanthi, T. Siri Chandana	277-280
50	Multilevel Hierarchy Based Privacy Preserved Profile Publishing In Cloud Environment. - Esthala Abhishek,Kambhampati Adinarayana,Battula Ramesh,G. Sambasiva Rao	281-286
51	Music Recommendation Application Based On Facial Expressions - Ms Mohammad Arsha Sultana,Abdul Saherabegum, Akhila Umma, Guthula Jayasri Sai Nikitha	287-290
52	Mutual Fund Prediction Using Machine Learning - Shaik Nannu Saidavali,N.Vinay Chandra Pal, K.Bhaskar Reddy	291-295
53	Network Coding Techniques To Store The Data Securely In Cloud. - Guru Brahmam Madala, Vijay Anand R	296-301
54	Network Spam And Fake User Detection In Online Social Networks Using Support Vector Machine. - Majeti Pavan Kalyan,Anchula Sreekanth,Ravi Mahesh Babu,G. Sambasiva Rao	302-307
55	Next Word Prediction Using Recurrent Neural Networks - Srikanth Kolisetty,B. Venkateswarlu, S. Siva Sai Kumar, T. Uday Kumar	308-313

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56	Nobel Methodologies For Immigration Of Service Oriented Architecture Based Applications To Microservice Architecture - M Madhu Sudhan, P Indupriyankaray, Aelluri Lakshmi, M Sreenandan Reddy	314-317
57	Plant Leaf Disease Detection System Using Resnet-50 - Chappa.Ramya Sai,K.Kavya,K.Meghana,A.Tulasi	318-321
58	Predicting The Survival Of Patients With Heart Failure-Machine Learning Methods - Hemalatha Tatiparthi,G.Mounika,K.Prasanthi,G.Hemavani	322-329
59	Prediction Of Agriculture Yields Using Machine Learning Algorithms. - Katepalli Sai Sravanthi,Grandhisila Venkatanagalakshmipravallika,Kollipara Harika ,M. Mamatha	330-335
60	Prediction Of Covid 19 Epidemics Using Data Analytics - S.Anil Kumar,G.Sathar	336-343
61	Prediction Of Covid Readmissions Using Machine Learning - Athukuri Lakshmi Narendra Kumar,B.V.V.N.Sai Kumar	344-347
62	Rainfall Prediction Using Machine Learning - Anusha Bhavanam,Ch. Vyshnavi, Ch.Priyanka	348-353
63	Review On Load Balancing Using Cloud Computing - J Raghunath ,A Chandra Sekhar, Shaik Razia, D Venkatesh	354-362
64	Road Safety And Vehicle Accident Prevention - G.Gayatri,G.Gayatri,K.Sugunitha	363-367
65	Sensile Soil Analyzing Application - Mathi Raasi,G.Santhi Sri,M Sravya,Shaik Khaja Mohiddin Basha	368-373
66	Sentiment Analysis Of Movie Reviews Using Ml -Mukunda Gagula,Lakshma Reddy,Sai Venkatesh,Shaik Rafi	374-377
67	Supevised Learning Models for perception of Multi-Trafic Scene	378-383
68	Smart Parking System Using Web Application, - K Razeena Begum, S Anand, K Vivek, K Manideep	384-387

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69	Social Distance Monitoring Using Deep Learning - Satuluri Vijaya Lakshmi.K.K.N. Bhuvaneswari, B.Vijaya Lakshmi	388-398
70	Stock Value Prediction Using Regression - B.Jhansi Vazram, G.Venkatrao, D.Srtinivasa Reddy, V.Ashok Kumar	399-404
71	Summarized Reviews With Attention Mechanism Using Lstm - Tahfeem Shaik,Sirajuddin,Shaikrafi	405-408
72	Supervised Learning For Fraud And Malware Detection From Android Applications. - Tunuguntla Bala Bhaskar Rao ,Dronadula Narendra, Maddu Phanindra Kumar,Dr. S.V.N.Srinivasu	409-415
73	Trust-Based Privacy Preserving Photo Sharing In Online Social Networks - Mrs R.Padmaja,Sk.Shahnoor, N.Nikhila, L.Thanusha	416-419
74	Useableness And Applications Of Blockchain Technology In Cloud Computing Environment - D Venkatesh,M Vijaya Bhaskar, J Raghunath, D Raghava Raju	420-426
75	Weather Prediction - Kotha Tharun Teja,G.Ashok,K.Raviteja,N.Raviteja	427-431
76	Wholesale And Retail Store Management System - Mr K Siva Rama Krishna,Saranya Bala.Y ,Triveni.V , Sai Divya	432-435

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Facial Expression Recognition with Convolutional Neural Networks

Dr.S.Siva Nageswara Rao[1],S.Ramya[2], T.Anantha Lavanya[3]

[1]*Professor, Department of Computer Science and Engineering, Narasaraopeta Engineering College, Narasaraopet,AP,India*

[2,3]*Student, Department of Computer Science and Engineering, Narasaraopeta Engineering College, Narasaraopet,AP,India*

[1]profssnr@gmail com ,[2]ramyasunkara52@gmail.com,[3]lavanyatummala777@gmail.com

Abstract— **Emotions are a powerful tool in communication and one way that humans show their emotions is through their facial expressions. One of the challenging and powerful tasks in social communications is facial expression recognition, as in non-verbal communication, facial expressions are key. Face Expression Recognition (FER) has become the main area of interest due to its wide applications. Automatic Facial expression recognition has drawn the attention of researchers as it has many applications. Facial Expression Recognition gives important information about emotions of a human being. Many feature selection methods have been developed for identification of expressions from still images and real time videos. In this paper, we demonstrate the classification of FER based on static images, using CNNs,This work gives a detailed review of research works done in the field of facial expression identification and various methodologies implemented for facial expression recognition.**

Keywords---Face expression Recognition(FER), Convolutional Neural Networks(CNN),Emotion Recognition, automatic facial expression recognition, deep learning.

I. INTRODUCTION

A. Motivation

Facial expressions are fundamentally important in human communication. Although recognizing basic expressions under controlled conditions (e.g. frontal faces and posed expressions) is a solved problem with 98.9% accuracy, distinguishing basic expressions in natural conditions is still challenging due to variations in head pose, illumination, and occlusions.However, with the advent of deep learning in the recent decade, FER technology under natural conditions has achieved remarkable accuracy in categorizing emotions from facial images, exceeding human level performance. This has allowed for the development of ground breaking applications in sociable robotics, medical treatment, driver fatigue surveillance, and many other human-computer interaction systems .

A facial expression recognition system is an automated system which can analyze the features of the face from static image or a live video dataset and identify the facial expression into various classes. Emotion recognition can be performed using different features, such as face speech, EEG, and even text. Among these features, facial expressions are one of the most popular, if not the most popular, due to a number of reasons; they are visible, they contain many useful features for emotion recognition, and it is easier to collect a large dataset of faces (than other means for human recognition) . Recently, with the use of deep learning and especially convolutional neural networks (CNNs), many features can be extracted and learned for a decent facial expression recognition system.

Deep learning algorithms have been applied in facial expression recognition (FER) for addressing the aforementioned issues along with different learning tasks. In deep learning algorithms, the process of feature extraction uses an automatic approach to identify and extract distinct features. Deep learning algorithms comprise a layered architecture of data representation. The final layers of the networks serve as high-level feature extractors and the lower layers as low-level feature extractors. Recurrent convolution networks (RCNs) have been introduced for video processing. They apply convolutional neural networks on frames of videos which are then fed to a recurrent neural network (RNN) for the analysis of temporal information.

B.Proposed System

In this paper we propose a deep learning based framework to develop a FER system using CNN. The system will classify the expression Of a human face into one of seven expressionsanger, happiness, sadness, surprise, fear, neutral, disgust. The model thus developed can be used to categorize human faces in real time using a webcam or from

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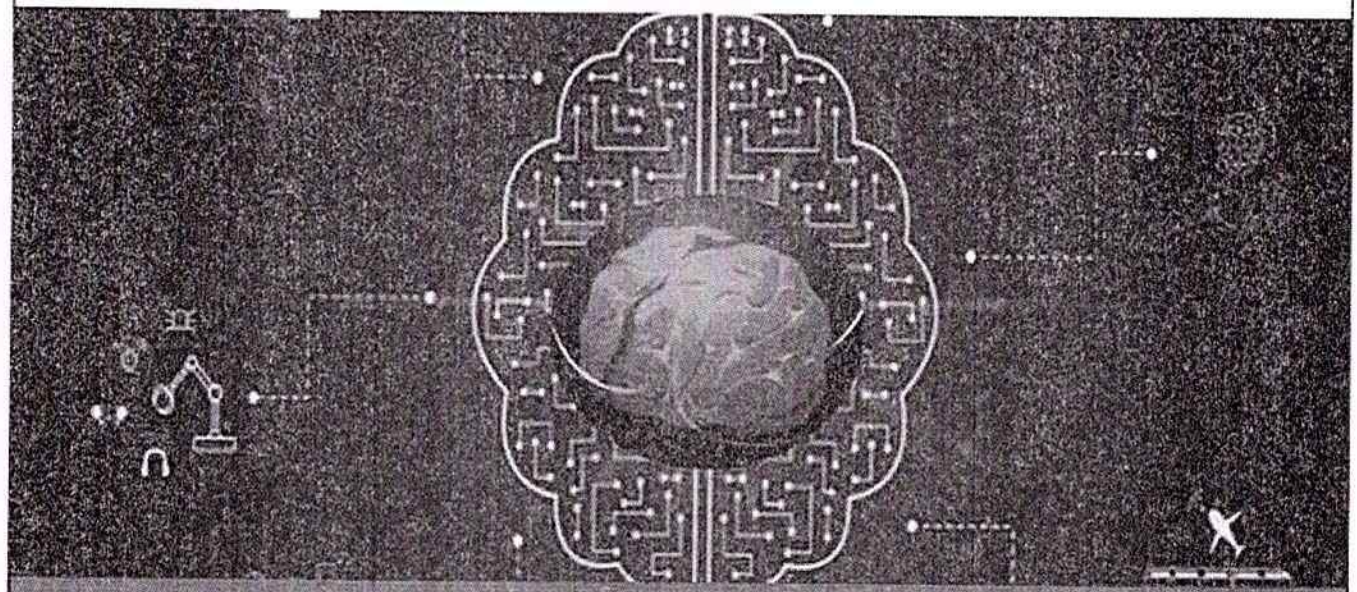

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	Artificial Intelligence and Its Emerging Areas -NEC-ICAIIA 2K21	
1.	A Data Mining Based Model For Detection Of Deceitful Behaviour In Water Consumption - Tejasri Choudi,B.V.Satish, V.Naga Jyothi, K.Navya	1-5
2	A Machine Learning Framework For Prediction Of Heart Disease, Ramasetty Ramu,Kota Jagadeesh,Chanti Rajamohan Reddy,V. Mahesh Babu	6-10
3	A Supervised Learning Algorithm For Credit Card Fraud Detection, - Guggilam Sai Sri, Gummadilli Gouthami, Potluri Srividya, M. Mamatha	11-15
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13	Convolutional Lstm Model For Sentiment Analysis On Social Big Data - Raghuveer Pachipulusu,V.Ananth Reddy, R.Sai Kiran, T.Vignesh	66-72
14	Data Preprocessing For Efficient Prediction In Customer Relationship Management, - Patur Ganga, K.Arun	73-78
15	Design And Experimental Study Of Automatic Colour Sorting By A Robotic Arm System - T.Lakshmibai	79-82
16	Detection Of Autism Disorder Based On Eeg Signal Using Deep Learning Methods -Ranjani M.P.Supraja	83-87
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18	Detection Of Phishing Attacks Using Natural Language Processing And Logistic Regression Model, - Surubula Thirupathi Rao,Pothukuchi Mahesh Babu,Rayala Venu,V. Mahesh Babu	92-98
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23	Door Security System Using Face Recognition -Dr A Srinivasa Rao,K.G.J.Prasanth, M. Rama Rao	121-123
24	ECG Classification With Convolutional Neural Networks - S V N Sreenivasu,T Bhargavika,B Anusha ,P Jayasri	124-129
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27	Eye Ball Cursor Movement Using Opencv - B.Preethi.D.Bharadwaja.B.Preethi. K.Charithra Lavanya.N.Sony	143-147
28	Face.Age And Gender Recogntion System Based on Deep Neural Networks - Gudapati Syam Prasad.K.Narendra Babu.N.Hemanth Kumar.K.Sriniivas	148-154
29	Facial Expression Recognition With Convolutional Neural Networks - S. Siva Nageswara Rao.S.Ramya. T.Anantha Lavanya	155-162
30	Fake Currency Detection. - Mr.Sk.K.M.Basha . Yalagala Hema Latha. Gatakala Venkata Sravya Bhavani. Macharla Maitili	163-167
31	Fake News Detection - Gangasani Likitha. I. Navya Sri. D. Swetha	168-175
32	Fake News Detection Using Machine Learning - Srikanth Mylapalli.Mylapalli Ramesh	176-180
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35	Generic Recommendation Engine Using Hybrid Filtering Model - G Prabhakara Reddy,O Ramesh. Ch Anil	190-200
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37	Heart Disease Prediction Using Machine Learning - Jhansi Lakshmi Manukonda ,R. V. P. S. Rekha. T. Divya. G. L. N. Jayaprada	204-208
38	House Price Prediction - Bodlapati Sowmya Reddy.M. Yamini Priya. P. Manasa	209-213
39	Image Captioning Using Deep Learning - Y E V Pratap Kumar Kuchi.M.Sireesha. G. Sai Akhil. K. Hema Sai Mourya Gupta	214-219

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Principal
NARASARAOPETA ENGINEERING COLLEGE
(AUTONOMOUS)
NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

40	Image Classification Using Object Detection With YOLO Algorithm. Shaik Bhadhar Shareef.Putchakayala Ramesh.Angajala Anil.G. Sambasiva Rao	220-223
41	Implementation Of Video Steganography Cryptography System For Iot-Based Cloud Computing Security. - Samvarapu Sagar Reddy.Mallavarapu Nikhil.Chevala Venkatesh.Dr. S.V.N Srinivasu	224-228
42	Inform Me-Family Gps Locator - Oruganti Ramesh.G Prabhakara Reddy. Ch. Anil	229-233
43	Ipl Score Prediction Using Machine Learning Methods - Rajyalakshmi Dondapati.N.Likitha.M.Anmisha	234-241
44	Liver Disease Prediction Using Machine Learning Methods - Sravana Sandhya Rani Karnati.K. Sravana Sandhya Rani. B.V.Gayithri.K.Vijayalakshmi	242-249
45	Loan Prediction System - Divya Gopavarapu.K.Manasa.A.Akhila.M.Sireesha	250-255
46	Lung Cancer Prediction - Naga Mallika Gude.M. Navya Sri. B. Sukanya	256-263
47	Map Reduced Segmentation Clustering For Big Data Analytics Using Extended K-Mean Clustering Technique - Mvs.Prasad	264-270
48	Mask R-Cnn For Fire Detection - Razeena Begum Shaik.S Yogananda Datta . M S V Manoj	271-276
49	Melanoma Prediction Using Deep Learning - Aishwarya Nallapati.D. Jaya Tejaswini. J. Prashanthi. T. Siri Chandana	277-280
50	Multilevel Hierarchy Based Privacy Preserved Profile Publishing In Cloud Environment. - Esthala Abhishek.Kambhampati Adinarayana.Battula Ramesh.G. Sambasiva Rao	281-286
51	Music Recommendation Application Based On Facial Expressions - Ms Mohammad Arsha Sultana.Abdul Saherabegum. Akhila Umma. Guthula Jayasri Sai Nikitha	287-290
52	Mutual Fund Prediction Using Machine Learning - Shaik Nannu Saidavali.N.Vinay Chandra Pal. K.Bhaskar Reddy	291-295
53	Network Coding Techniques To Store The Data Securely In Cloud. - Guru Brahmam Madala. Vijay Anand R	296-301
54	Network Spam And Fake User Detection In Online Social Networks Using Support Vector Machine. - Majeti Pavan Kalyan.Anchula Sreekanth.Ravi Mahesh Babu.G. Sambasiva Rao	302-307
55	Next Word Prediction Using Recurrent Neural Networks - Srikanth Kolisetty.B. Venkateswarlu. S. Siva Sai Kumar. T. Uday Kumar	308-313

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NARASARAOPETA ENGINEERING COLLEGE
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NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

56	Nobel Methodologies For Immigration Of Service Oriented Architecture Based Applications To Microservice Architecture - M Madhu Sudhan, P Indupriyankaray, Aelluri Lakshmi, M Sreenandan Reddy	314-317
57	Plant Leaf Disease Detection System Using Resnet-50 - Chappa.Ramya Sai,K.Kavya,K.Meghana,A.Tulasi	318-321
58	Predicting The Survival Of Patients With Heart Failure-Machine Learning Methods - Hemalatha Tatiparthi,G.Mounika,K.Prasanthi,G.Hemavani	322-329
59	Prediction Of Agriculture Yields Using Machine Learning Algorithms. - Katepalli Sai Sravanthi,Grandhisila Venkatanagalakshmipravallika,Kollipara Harika ,M. Mamatha	330-335
60	Prediction Of Covid 19 Epidemics Using Data Analytics - S.Anil Kumar,G.Sathar	336-343
61	Prediction Of Covid Readmissions Using Machine Learning - Athukuri Lakshmi Narendra Kumar,B.V.V.N.Sai Kumar	344-347
62	Rainfall Prediction Using Machine Learning - Anusha Bhavanam,Ch. Vyshnavi, Ch.Priyanka	348-353
63	Review On Load Balancing Using Cloud Computing - J Raghunath ,A Chandra Sekhar, Shaik Razia, D Venkatesh	354-362
64	Road Safety And Vehicle Accident Prevention - G.Gayatri,G.Gayatri,K.Sugunitha	363-367
65	Sensile Soil Analyzing Application - Mathi Raasi,G.Santhi Sri,M Sravya,Shaik Khaja Mohiddin Basha	368-373
66	Sentiment Analysis Of Movie Reviews Using Ml -Mukunda Gagula,Lakshma Reddy,Sai Venkatesh,Shaik Rafi	374-377
67	Supevised Learning Models for perception of Multi-Trafic Scene	378-383
68	Smart Parking System Using Web Application. - K Razeena Begum, S Anand, K Vivek, K Manideep	384-387

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Guntur (Dist.), A.P.

69	Social Distance Monitoring Using Deep Learning - Satuluri Vijaya Lakshmi.K.K.N. Bhuvaneswari. B.Vijaya Lakshmi	388-398
70	Stock Value Prediction Using Regression - B.Jhansi Vazram. G.Venkatrao. D.Srtinivasa Reddy. V.Ashok Kumar	399-404
71	Summarized Reviews With Attention Mechanism Using Lstm - Tahfeem Shaik.Sirajuddin.Shaikrafi	405-408
72	Supervised Learning For Fraud And Malware Detection From Android Applications. - Tunuguntla Bala Bhaskar Rao .Dronadula Narendra. Maddu Phanindra Kumar.Dr. S.V.N.Srinivasu	409-415
73	Trust-Based Privacy Preserving Photo Sharing In Online Social Networks - Mrs R.Padmaja.Sk.Shahnoor. N.Nikhila. L.Thanusha	416-419
74	Useableness And Applications Of Blockchain Technology In Cloud Computing Environment - D Venkatesh.M Vijaya Bhaskar. J Raghunath. D Raghava Raju	420-426
75	Weather Prediction - Kotha Tharun Teja.G.Ashok.K.Raviteja.N.Raviteja	427-431
76	Wholesale And Retail Store Management System - Mr K Siva Rama Krishna.Saranya Bala.Y .Triveni.V . Sai Divya	432-435

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Fake Currency Detection Using Machine learning Techniques

(13)

Mr.SK.K.M.BASHA[1], Yalagala Hema Latha[2]
Gatakala Venkata Sravya Bhavani[3], Macharla Maitili[4]

[1]Asst.Professor, Narasaraopeta Engineering College,Narasaraopet,India
[1]Student,Computer Science and Engineering Dept, Narasaraopeta Engineering College,Narasaraopet,India

[2]hemayalagala@gmail.com,[3]gvsbhavani2000@gmail.com,[4]Maithilimacherla123@gmail.com

Abstract

Fake Currency Detection is a real problem for both individuals and businesses. . Counterfeiters are constantly finding new methods and techniques to produce counterfeit banknotes, which are essentially indistinguishable from real money. In this project we can find Fake Currency Detection with Machine Learning.

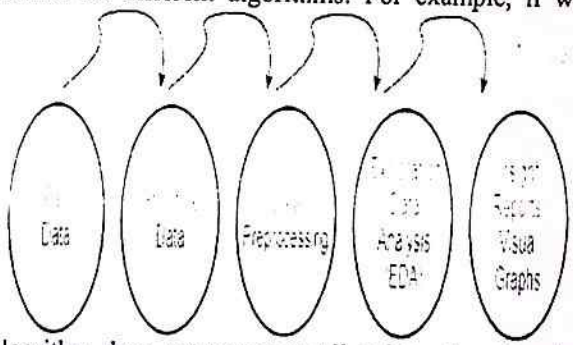
1 Introduction

Machine learning is one of the applications of artificial intelligence (AI) that provides computers, the ability to learn automatically and improve from experience instead of explicitly programmed. It focuses on developing computer programs that can access data and use it to learn from themselves[3]. The main aim is to allow computers to learn automatically without human intervention and also adjust actions accordingly. We have developed a system using data mining which has the ability to predict whether the currency is real or fake[5]. The advancement of color printing technology has increased the rate of fake currency note printing and duplicating the notes on a very large scale. Few years back, the printing could be done in a print house, but now anyone can print a currency note with maximum accuracy using a simple laser printer. As a result the issue of fake notes instead of the genuine ones has been increased very largely. India has been unfortunately cursed with the problems like corruption and black money.

2.Literature Review

S.Arya and M. Sasikumar proposed a system for the detection of currency notes with a higher accuracy in machine learning technique[14]. The proposed model gives the best results for detection of currency and the result showed that the prediction system is capable of predicting the currency notes effectively, efficiently and most importantly, instantly.

into clean data. In-order to achieve better results using a model in Machine Learning, data format has to be in a proper manner. The data should be in a particular format for different algorithms. For example, if we consider Random Forest algorithm it does not support null values. So that those null values have to be managed using raw data.



Need of Data Pre-processing

For achieving better results from the applied model in Machine Learning projects the format of the data has to be in a proper manner. Some specified Machine Learning model needs information in a specified format. For example, Random Forest algorithm does not support null values, therefore to execute random forest algorithm null values have to be managed from the original raw data set[8]. Another aspect is that data set should be formatted in such a way that more than one Machine Learning and Deep Learning algorithms are executed in one dataset, and best out of them is chosen.

S.No	Attribute	Description
1	Variance	variance of the image transformed into wavelets
2	Asymmetry	asymmetry of the image transformed into wavelets
3	Kurtosis	Kurtosis of the image transformed into wavelets
4	Entropy	Image entropy
5	Outcome	Either 1 or 0



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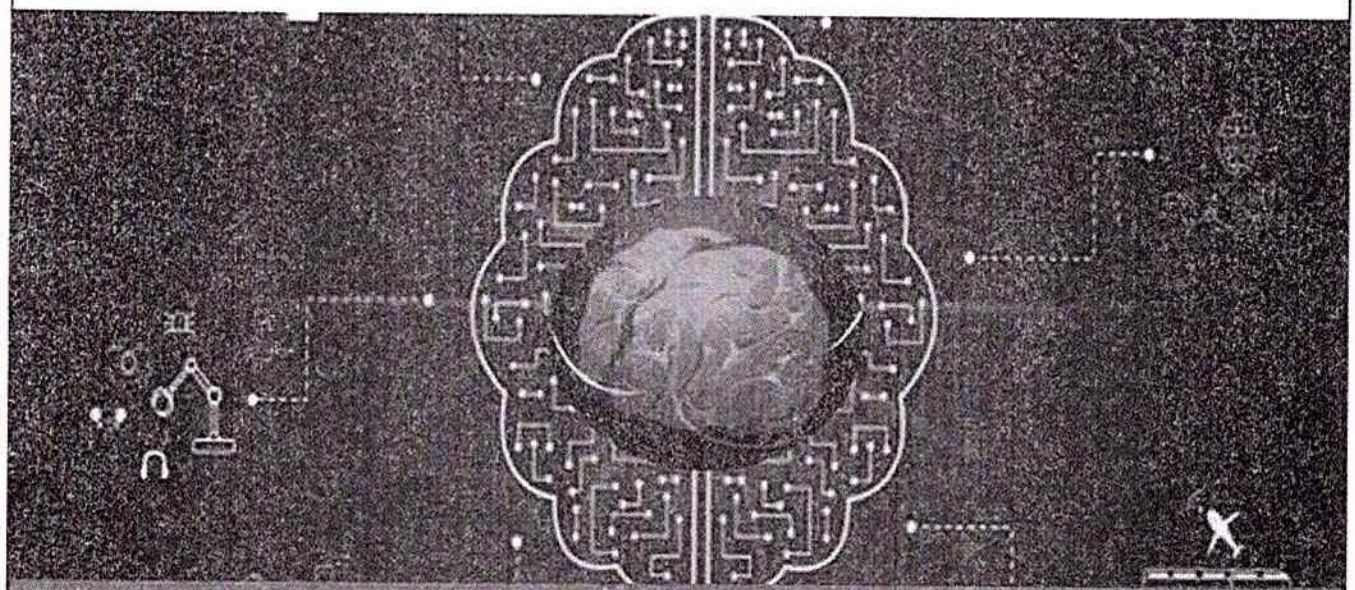

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International Conference On

Artificial Intelligence and Its Emerging Areas

-

REF. NO	TITLE OF THE PAPER AND AUTHOR(S)	Page No.
	Artificial Intelligence and Its Emerging Areas -NEC-ICAIIA 2K21	
1.	A Data Mining Based Model For Detection Of Deceitful Behaviour In Water Consumption - Tejasri Choudi,B.V.Satish, V.Naga Jyothi, K.Navya	1-5
2	A Machine Learning Framework For Prediction Of Heart Disease. Ramasetty Ramu,Kota Jagadeesh,Chanti Rajamohan Reddy,V. Mahesh Babu	6-10
3	A Supervised Learning Algorithm For Credit Card Fraud Detection. - Guggilam Sai Sri, Gummadilli Gouthami, Potluri Srividya, M. Mamatha	11-15
4	Amazon Product Review Sentiment Analysis Using Machine Learning - Ms Mohammad Arsha Sultana,P. Rakesh, M. Sandeep. G. Jagadeesh	16-20
5	An Interactive Study Of Thyroid Disease Prediction Using Machine Learning - D. Lokesh Gupta, D.Lokesh Gupta, K.V.Narasimha Reddy, D.Ramesh, V.Veerendra	21-25
6	Autoregressive Integrated Moving Average Model For Prediction Of Crypto Currency, - Pokuri Jaya Venkata Naga Sudhakar,Alladi Anil,Avula Venkata Rami Reddy,V. Mahesh Babu	26--29
7	Biometric Identification Scheme With Efficient Privacy-Preserving Mechanism For Cloud Computing Service, - Shaik Ruksana,Bandaru Naga Siva Saisuryatejaswi,Yadavalli Yedukondalu,M. Mamatha	30-34
8	Bitcoin Price Prediction -Mrs R.Padmaja,K.V.D Hanisha, B Amulya, M Harika	35-38
9	Calories Burned Prediction, - Niharika Motupalli, B.Siva Kanaka Raju Shaik Mehataj , U. Jhansi Rani, T .Bhavani	39-45
10	Cartoonize Image Using Deep Learning - Gouse Mastan Vali,D.Vamsi Krishna, A.Sairam,K.S.Lakshmi Narayana	46-54
11	Children Speech Recognition Using Machine Learning Methodologies - Dr.T.V.Sai Krishna, R Venkat	55-60

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Principal
NARASARAOPETA ENGINEERING COLLEGE
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NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

12	Clarification Of Webbing Through Cloud Computing Technologies - Amara.S.A.L.G.Gopala Gupta.Dr. Gudapati Syam Prasad	61-65
13	Convolutional Lstm Model For Sentiment Analysis On Social Big Data - Raghuveer Pachipulusu.V.Ananth Reddy. R.Sai Kiran. T.Vignesh	66-72
14	Data Preprocessing For Efficient Prediction In Customer Relationship Management. - Patur Ganga. K.Arun	73-78
15	Design And Experimental Study Of Automatic Colour Sorting By A Robotic Arm System - T.Lakshmibai	79-82
16	Detection Of Autism Disorder Based On Eeg Signal Using Deep Learning Methods -Ranjani M.P.Supraja	83-87
17	Detection Of Online Public Shaming With Offensive Content On Twitter. - Gutta Sai Durga.Gopu Sandhya.Jonnalagadda Madhavi. Dr. S.V.N.Srinivasu	88-91
18	Detection Of Phishing Attacks Using Natural Language Processing And Logistic Regression Model. - Surubula Thirupathi Rao.Pothukuchi Mahesh Babu.Rayala Venu.V. Mahesh Babu	92-98
19	Detection Of Social Network Mental Disorders Through Mining Of Online Social Media. - Battula Venkata Ananta Mehar Gopi.Rajarapu Venu Babu.Maddineni Naveen .Dr. S.V.N.Srinivasu	99-103
20	predections in healthy population through machine learning	104-108
21	Diabetics Prediction using Machine Learning Techniques. - Pathan Sajida. S.Amulya . V.Nandhini	109-114
22	DL-CNN Framework For Malicious Social Bots Detection. - Syed Fathima.Ponnapati Mallika.Gandru Akhilendra Chowdary.M. Mamatha	115-120
23	Door Security System Using Face Recognition -Dr A Srinivasa Rao.K.G.J.Prasanth. M. Rama Rao	121-123
24	ECG Classification With Convolutional Neural Networks - S V N Sreenivasu.T Bhargavika,B Anusha .P Jayasri	124-129
25	Emotion Recognition From Multimodal Data(Speech. Video. Text) Based On Deep Learning Techniques M.P.Supraja	130-137

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NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

26	Estimation Of Population Analysis - Tarun.G.Tarun.T.Purnavamsi.K.Vivekreddy	138-142
27	Eye Ball Cursor Movement Using Opencv - B.Preethi.D.Bharadwaja.B.Preethi. K.Charithra Lavanya.N.Sony	143-147
28	Face.Age And Gender Recogntion System Based on Deep Neural Networks - Gudapati Syam Prasad.K.Narendra Babu.N.Hemanth Kumar.K.Sriniivas	148-154
29	Facial Expression Recognition With Convolutional Neural Networks - S. Siva Nageswara Rao.S.Ramya. T.Anantha Lavanya	155-162
30	Fake Currency Detection. - Mr.Sk.K.M.Basha , Yalagala Hema Latha. Gatakala Venkata Sravya Bhavani. Macharla Maitili	163-167
31	Fake News Detection - Gangasani Likitha. I. Navya Sri. D. Swetha	168-175
32	Fake News Detection Using Machine Learning - Srikanth Mylapalli.Mylapalli Ramesh	176-180
33	Forest Fires Detection Using Machine Learning Algorithms - N.S.Sesi Kiran.P. Lakshmi Narayana, Sk. Mastanvali, P. Nivas	181-185
34	Functioning Of Artificial Intelligence In An Self-Driving Vehicle - A Review -Penugonda Surya Teja.None	186-189
35	Generic Recommendation Engine Using Hybrid Filtering Model - G Prabhakara Reddy,O Ramesh. Ch Anil	190-200
36	Head Motion Detection - Dr A Srinivasa Rao.M.Prathyusha, Y.Rajeswari	201-203
37	Heart Disease Prediction Using Machine Learning - Jhansi Lakshmi Manukonda ,R. V. P. S. Rekha, T. Divya, G. L. N. Jayaprada	204-208
38	House Price Prediction - Bodlapati Sowmya Reddy.M. Yamini Priya. P. Manasa	209-213
39	Image Captioning Using Deep Learning - Y E V Pratap Kumar Kuchi.M.Sireesha. G. Sai Akhil. K. Hema Sai Mourya Gupta	214-219

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NARASARAOPETA ENGINEERING COLLEGE
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NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

40	Image Classification Using Object Detection With YOLO Algorithm. Shaik Bhadhar Shareef.Putchakayala Ramesh.Angajala Anil.G. Sambasiva Rao	220-223
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42	Inform Me-Family Gps Locator - Oruganti Ramesh.G Prabhakara Reddy. Ch. Anil	229-233
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48	Mask R-Cnn For Fire Detection - Razeena Begum Shaik.S Yogananda Datta . M S V Manoj	271-276
49	Melanoma Prediction Using Deep Learning - Aishwarya Nallapati.D. Jaya Tejaswini. J. Prashanthi. T. Siri Chandana	277-280
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51	Music Recommendation Application Based On Facial Expressions - Ms Mohammad Arsha Sultana.Abdul Saherabegum. Akhila Umma. Guthula Jayasri Sai Nikitha	287-290
52	Mutual Fund Prediction Using Machine Learning - Shaik Nannu Saidavali.N.Vinay Chandra Pal. K.Bhaskar Reddy	291-295
53	Network Coding Techniques To Store The Data Securely In Cloud. - Guru Brahmam Madala. Vijay Anand R	296-301
54	Network Spam And Fake User Detection In Online Social Networks Using Support Vector Machine. - Majeti Pavan Kalyan.Anchula Sreekanth.Ravi Mahesh Babu.G. Sambasiva Rao	302-307
55	Next Word Prediction Using Recurrent Neural Networks - Srikanth Kolisetty.B. Venkateswarlu.S. Siva Sai Kumar. T. Uday Kumar	308-313

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57	Plant Leaf Disease Detection System Using Resnet-50 - Chappa.Ramya Sai,K.Kavya,K.Meghana,A.Tulasi	318-321
58	Predicting The Survival Of Patients With Heart Failure-Machine Learning Methods - Hemalatha Tatiparthi,G.Mounika,K.Prasanthi,G.Hemavani	322-329
59	Prediction Of Agriculture Yields Using Machine Learning Algorithms. - Katepalli Sai Sravanthi,Grandhisila Venkatanagalakshmipravallika,Kollipara Harika ,M. Mamatha	330-335
60	Prediction Of Covid 19 Epidemics Using Data Analytics - S.Anil Kumar,G.Sathar	336-343
61	Prediction Of Covid Readmissions Using Machine Learning - Athukuri Lakshmi Narendra Kumar,B.V.V.N.Sai Kumar	344-347
62	Rainfall Prediction Using Machine Learning - Anusha Bhavanam,Ch. Vyshnavi, Ch.Priyanka	348-353
63	Review On Load Balancing Using Cloud Computing - J Raghunath ,A Chandra Sekhar, Shaik Razia, D Venkatesh	354-362
64	Road Safety And Vehicle Accident Prevention - G.Gayatri,G.Gayatri,K.Sugunitha	363-367
65	Sensile Soil Analyzing Application - Mathi Raasi,G.Santhi Sri,M Sravya,Shaik Khaja Mohiddin Basha	368-373
66	Sentiment Analysis Of Movie Reviews Using Ml -Mukunda Gagula,Lakshma Reddy,Sai Venkatesh,Shaik Rafi	374-377
67	Supevised Learning Models for perception of Multi-Trafic Scene	378-383
68	Smart Parking System Using Web Application. - K Razeena Begum, S Anand, K Vivek, K Manideep	384-387

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70	Stock Value Prediction Using Regression - B.Jhansi Vazram. G.Venkatrao. D.Srtinivasa Reddy. V.Ashok Kumar	399-404
71	Summarized Reviews With Attention Mechanism Using Lstm - Tahfeem Shaik.Sirajuddin.Shaikrafi	405-408
72	Supervised Learning For Fraud And Malware Detection From Android Applications. - Tunuguntla Bala Bhaskar Rao .Dronadula Narendra. Maddu Phanindra Kumar.Dr. S.V.N.Srinivasu	409-415
73	Trust-Based Privacy Preserving Photo Sharing In Online Social Networks - Mrs R.Padmaja.Sk.Shahnoor. N.Nikhila. L.Thanusha	416-419
74	Useableness And Applications Of Blockchain Technology In Cloud Computing Environment - D Venkatesh.M Vijaya Bhaskar. J Raghunath. D Raghava Raju	420-426
75	Weather Prediction - Kotha Tharun Teja.G.Ashok.K.Raviteja.N.Raviteja	427-431
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Implementation of Video Steganography Cryptography System for IoT-based Cloud Computing Security

SANIVARAPU SAGAR REDDY[1], MALLAVARAPU NIKHIL[2], CHEVALA VENKATESH[3], Dr. S.V.N.SRINIVASU[4]
sagarreddysanivarapu143@gmail.com[1], Nikhillucky3333@gmail.com[2], venkatchevala4575@gmail.com[3], drsvnsrinivasu@gmail.com[4]
[1,2,3]Student, Department of MCA, Narasaraopeta Engineering College,
[4]Professor,Department of CSE, Narasaraopeta Engineering College

Abstract

In today's world, digitization plays an extremely prominent role in day-to-day applications. Its future deployment needs an Internet of Things (IoT) to embrace automation, remote monitoring and predictive analysis. IoT is a device connected with an internet and it's a combined embedded technology including actuator and sensor device. Also, it encompasses, wired and wireless communication devices, and real-world physical objects connected to the internet. IoT is majorly used in diversified fields like smart classroom, smart banking, smart home, smart agriculture, smart healthcare application etc. For effectively, securing the IoT based information, this article deals about the implementation of joint steganography-cryptography scheme for video data transmission in the IoT environment. However, the intrusion of attackers is gaining its relevance as more IoT sensor nodes are associated with infinite amount of data. Further, the robustness of the system reduces as there is more intervention of intruders in the network. Initially, it was thought that RSA cryptosystems can be used to provide security, since it offers lesser computational burden over the system. However, it certainly gets outdated when a point is reached, as more intruders enter the system. The computational complexity slightly increases as the algorithm gets outdated. However, existing original RSA and ECC algorithm is subjected to certain problems due to its linear computational problem. Thus, this paper deals with implementation of Hyperelliptic curve cryptography (HECC) as an alternative solution to the ECC to concentrated on such security problem to evaluate the trustiness of cloud data to resist it from malicious attack. Along with text data is encrypted using advanced encryption standard based Cipher Block Chaining method. Finally, stego video is generated using the LSB method. The simulation results show that, the proposed method gives the robust performance compared to the state of art approaches.

Keywords:

1. Introduction:

Video steganography [1] has become a major application for multimedia security in IoT field with respect to fields like smart classroom [2], smart banking [3], smart home [4], smart agriculture, smart healthcare application etc. It can be used to check the authentic user's legitimacy. Some of these techniques use the entire video to embed specific data on content. Use of the entire video to hide information can sometimes lead to a decrease in stego video visual quality [5]. This can be a major disadvantage for the security of video steganography in the real-time application. By the way, the quality of the video viewed by the user is undermined, which is one of the major criteria for videos distributed via the real-time application. The product of optimized stego video could overcome this disadvantage [6]. This optimal solution for video steganography not only provides high payload but also compatibility with other steganography variables. z. For covered writing, video steganography is used. Every technique of video steganography hides a signal (the secret message) from a cover media, to receive a stego signal (stego video). In compliance with certain restrictions a hidden signal is located in an appropriate region of the cover signal. Such drawbacks include payload, numerical undetectability, imperceptibility, attack robustness, video data decoding, etc [7]. Some of these limitations not only contradictory but also multidisciplinary in nature. If the payload is increased, for instance, it may have a significant impact both on

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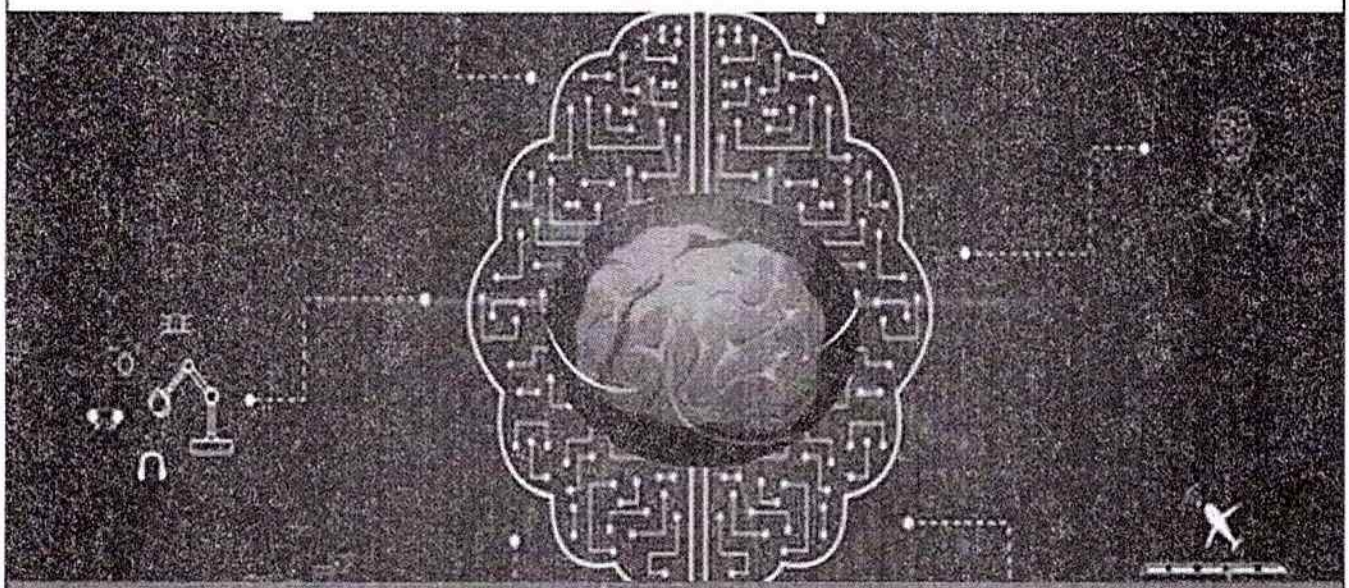

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International Conference On

Artificial Intelligence and Its Emerging Areas

-

REF. NO	TITLE OF THE PAPER AND AUTHOR(S)	Page No.
	Artificial Intelligence and Its Emerging Areas -NEC-ICAIIA 2K21	
1.	A Data Mining Based Model For Detection Of Deceitful Behaviour In Water Consumption - Tejasri Choudi,B.V.Satish, V.Naga Jyothi, K.Navya	1-5
2	A Machine Learning Framework For Prediction Of Heart Disease, Ramasetty Ramu,Kota Jagadeesh,Chanti Rajamohan Reddy,V. Mahesh Babu	6-10
3	A Supervised Learning Algorithm For Credit Card Fraud Detection, - Guggilam Sai Sri, Gummadilli Gouthami, Potluri Srividya, M. Mamatha	11-15
4	Amazon Product Review Sentiment Analysis Using Machine Learning - Ms Mohammad Arsha Sultana,P. Rakesh, M. Sandeep, G. Jagadeesh	16-20
5	An Interactive Study Of Thyroid Disease Prediction Using Machine Learning - D. Lokesh Gupta, D.Lokesh Gupta, K.V.Narasimha Reddy, D.Ramesh, V.Veerendra	21-25
6	Autoregressive Integrated Moving Average Model For Prediction Of Crypto Currency, - Pokuri Jaya Venkata Naga Sudhakar,Alladi Anil,Avula Venkata Rami Reddy,V. Mahesh Babu	26--29
7	Biometric Identification Scheme With Efficient Privacy-Preserving Mechanism For Cloud Computing Service, - Shaik Ruksana,Bandaru Naga Siva Saisuryatejaswi,Yadavalli Yedukondalu,M Mamatha	30-34
8	Bitcoin Price Prediction -Mrs R.Padmaja,K.V.D Hanisha, B Amulya, M Harika	35-38
9	Calories Burned Prediction, - Niharika Motupalli, B.Siva Kanaka Raju Shaik Mehataj , U. Jhansi Rani, T .Bhavani	39-45
10	Cartoonize Image Using Deep Learning - Gouse Mastan Vali,D.Vamsi Krishna, A.Sairam,K.S.Lakshmi Narayana	46-54
11	Children Speech Recognition Using Machine Learning Methodologies - Dr.T.V.Sai Krishna, R Venkat	55-60

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Principal
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12	Clarification Of Webbing Through Cloud Computing Technologies - Amara.S.A.L.G.Gopala Gupta.Dr. Gudapati Syam Prasad	61-65
13	Convolutional Lstm Model For Sentiment Analysis On Social Big Data - Raghuveer Pachipulusu.V.Ananth Reddy. R.Sai Kiran. T.Vignesh	66-72
14	Data Preprocessing For Efficient Prediction In Customer Relationship Management. - Patur Ganga. K.Arun	73-78
15	Design And Experimental Study Of Automatic Colour Sorting By A Robotic Arm System - T.Lakshmibai	79-82
16	Detection Of Autism Disorder Based On Eeg Signal Using Deep Learning Methods -Ranjani M.P.Supraja	83-87
17	Detection Of Online Public Shaming With Offensive Content On Twitter. - Gutta Sai Durga.Gopu Sandhya.Jonnalagadda Madhavi. Dr. S.V.N.Srinivasu	88-91
18	Detection Of Phishing Attacks Using Natural Language Processing And Logistic Regression Model. - Surubula Thirupathi Rao.Pothukuchi Mahesh Babu.Rayala Venu.V. Mahesh Babu	92-98
19	Detection Of Social Network Mental Disorders Through Mining Of Online Social Media. - Battula Venkata Ananta Mehar Gopi.Rajarapu Venu Babu.Maddineni Naveen .Dr. S.V.N.Srinivasu	99-103
20	predections in healthy population through machine learning	104-108
21	Diabetics Prediction using Machine Learning Techniques. - Pathan Sajida. S.Amulya . V.Nandhini	109-114
22	DL-CNN Framework For Malicious Social Bots Detection. - Syed Fathima.Ponnapati Mallika.Gandru Akhilendra Chowdary.M. Mamatha	115-120
23	Door Security System Using Face Recognition -Dr A Srinivasa Rao.K.G.J.Prasanth. M. Rama Rao	121-123
24	ECG Classification With Convolutional Neural Networks - S V N Sreenivasu.T Bhargavika.B Anusha .P Jayasri	124-129
25	Emotion Recognition From Multimodal Data(Speech. Video. Text) Based On Deep Learning Techniques D.P.Supraja	130-137

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26	Estimation Of Population Analysis - Tarun.G.Tarun.T.Purnavamsi.K.Vivekreddy	138-142
27	Eye Ball Cursor Movement Using Opencv - B.Preethi.D.Bharadwaja.B.Preethi. K.Charithra Lavanya.N.Sony	143-147
28	Face.Age And Gender Recogntion System Based on Deep Neural Networks - Gudapati Syam Prasad.K.Narendra Babu.N.Hemanth Kumar.K.Sriniivas	148-154
29	Facial Expression Recognition With Convolutional Neural Networks - S. Siva Nageswara Rao.S.Ramya. T.Anantha Lavanya	155-162
30	Fake Currency Detection. - Mr.Sk.K.M.Basha , Yalagala Hema Latha. Gatakala Venkata Sravya Bhavani. Macharla Maitili	163-167
31	Fake News Detection - Gangasani Likitha. I. Navya Sri. D. Swetha	168-175
32	Fake News Detection Using Machine Learning - Srikanth Mylapalli.Mylapalli Ramesh	176-180
33	Forest Fires Detection Using Machine Learning Algorithms - N.S.Sesi Kiran.P. Lakshmi Narayana. Sk. Mastanvali. P. Nivas	181-185
34	Functioning Of Artificial Intelligence In An Self-Driving Vehicle - A Review -Penugonda Surya Teja.None	186-189
35	Generic Recommendation Engine Using Hybrid Filtering Model - G Prabhakara Reddy.O Ramesh. Ch Anil	190-200
36	Head Motion Detection - Dr A Srinivasa Rao.M.Prathyusha. Y.Rajeswari	201-203
37	Heart Disease Prediction Using Machine Learning - Jhansi Lakshmi Manukonda .R. V. P. S. Rekha. T. Divya. G. L. N. Jayaprada	204-208
38	House Price Prediction - Bodlapati Sowmya Reddy.M. Yamini Priya. P. Manasa	209-213
39	Image Captioning Using Deep Learning - Y E V Pratap Kumar Kuchi.M.Sireesha. G. Sai Akhil. K. Hema Sai Mourya Gupta	214-219

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NARASARAOPETA ENGINEERING COLLEGE
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NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

40	Image Classification Using Object Detection With YOLO Algorithm. Shaik Bhadhar Shareef.Putchakayala Ramesh..Angajala Anil.G. Sambasiva Rao	220-223
41	Implementation Of Video Steganography Cryptography System For Iot-Based Cloud Computing Security. - Sanivarapu Sagar Reddy .Mallavarapu Nikhil.Chevala Venkatesh.Dr. S.V.N Srinivasu	224-228
42	Inform Me-Family Gps Locator - Oruganti Ramesh.G Prabhakara Reddy. Ch. Anil	229-233
43	Ipl Score Prediction Using Machine Learning Methods - Rajyalakshmi Dondapati.N.Likitha.M.Anmisha	234-241
44	Liver Disease Prediction Using Machine Learning Methods - Sravana Sandhya Rani Karnati.K. Sravana Sandhya Rani, B.V.Gayithri.K.Vijayalakshmi	242-249
45	Loan Prediction System - Divya Gopavarapu.K.Manasa.A.Akhila.M.Sireesha	250-255
46	Lung Cancer Prediction - Naga Mallika Gude.M. Navya Sri. B. Sukanya	256-263
47	Map Reduced Segmentation Clustering For Big Data Analytics Using Extended K-Mean Clustering Technique - Mvs.Prasad	264-270
48	Mask R-Cnn For Fire Detection - Razeena Begum Shaik.S Yogananda Datta . M S V Manoj	271-276
49	Melanoma Prediction Using Deep Learning - Aishwarya Nallapati.D. Jaya Tejaswini. J. Prashanthi. T. Siri Chandana	277-280
50	Multilevel Hierarchy Based Privacy Preserved Profile Publishing In Cloud Environment. - Esthala Abhishek.Kambhampati Adinarayana.Battula Ramesh.G. Sambasiva Rao	281-286
51	Music Recommendation Application Based On Facial Expressions - Ms Mohammad Arsha Sultana.Abdul Saherabegum. Akhila Umma. Guthula Jayasri Sai Nikitha	287-290
52	Mutual Fund Prediction Using Machine Learning - Shaik Nannu Saidavali.N.Vinay Chandra Pal. K.Bhaskar Reddy	291-295
53	Network Coding Techniques To Store The Data Securely In Cloud. - Guru Brahmam Madala. Vijay Anand R	296-301
54	Network Spam And Fake User Detection In Online Social Networks Using Support Vector Machine. - Majeti Pavan Kalyan.Anchula Sreekanth.Ravi Mahesh Babu.G. Sambasiva Rao	302-307
55	Next Word Prediction Using Recurrent Neural Networks - Srikanth Kolisetty.B. Venkateswarlu. S. Siva Sai Kumar. T. Uday Kumar	308-313

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NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

56	Nobel Methodologies For Immigration Of Service Oriented Architecture Based Applications To Microservice Architecture - M Madhu Sudhan, P Indupriyankaray, Aelluri Lakshmi, M Sreenandan Reddy	314-317
57	Plant Leaf Disease Detection System Using Resnet-50 - Chappa.Ramya Sai,K.Kavya,K.Meghana,A.Tulasi	318-321
58	Predicting The Survival Of Patients With Heart Failure-Machine Learning Methods - Hemalatha Tatiparthi,G.Mounika,K.Prasanthi,G.Hemavani	322-329
59	Prediction Of Agriculture Yields Using Machine Learning Algorithms. - Katepalli Sai Sravanthi,Grandhisila Venkatanagalakshmipravallika,Kollipara Harika ,M. Mamatha	330-335
60	Prediction Of Covid 19 Epidemics Using Data Analytics - S.Anil Kumar,G.Sathar	336-343
61	Prediction Of Covid Readmissions Using Machine Learning - Athukuri Lakshmi Narendra Kumar,B.V.V.N.Sai Kumar	344-347
62	Rainfall Prediction Using Machine Learning - Anusha Bhavanam,Ch. Vyshnavi, Ch.Priyanka	348-353
63	Review On Load Balancing Using Cloud Computing - J Raghunath ,A Chandra Sekhar, Shaik Razia, D Venkatesh	354-362
64	Road Safety And Vehicle Accident Prevention - G.Gayatri,G.Gayatri,K.Sugunitha	363-367
65	Sensile Soil Analyzing Application - Mathi Raasi,G.Santhi Sri,M Sravya,Shaik Khaja Mohiddin Basha	368-373
66	Sentiment Analysis Of Movie Reviews Using Ml -Mukunda Gagula,Lakshma Reddy,Sai Venkatesh,Shaik Rafi	374-377
67	Supevised Learning Models for perception of Multi-Trafic Scene	378-383
68	Smart Parking System Using Web Application. - K Razeena Begum, S Anand, K Vivek, K Manideep	384-387

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Guntur (Dist.), A.P.

69	Social Distance Monitoring Using Deep Learning - Satuluri Vijaya Lakshmi.K.K.N. Bhuvaneswari. B.Vijaya Lakshmi	388-398
70	Stock Value Prediction Using Regression - B.Jhansi Vazram. G.Venkatrao. D.Srtinivasa Reddy. V.Ashok Kumar	399-404
71	Summarized Reviews With Attention Mechanism Using Lstm - Tahfeem Shaik,Sirajuddin,Shaikrafi	405-408
72	Supervised Learning For Fraud And Malware Detection From Android Applications. - Tunuguntla Bala Bhaskar Rao ,Dronadula Narendra. Maddu Phanindra Kumar,Dr. S.V.N.Srinivasu	409-415
73	Trust-Based Privacy Preserving Photo Sharing In Online Social Networks - Mrs R.Padmaja,Sk.Shahnoor. N.Nikhila, L.Thanusha	416-419
74	Useableness And Applications Of Blockchain Technology In Cloud Computing Environment - D Venkatesh,M Vijaya Bhaskar. J Raghunath. D Raghava Raju	420-426
75	Weather Prediction - Kotha Tharun Teja,G.Ashok,K.Raviteja,N.Raviteja	427-431
76	Wholesale And Retail Store Management System - Mr K Siva Rama Krishna,Saranya Bala.Y .Triveni.V . Sai Divya	432-435

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15

Sensile Soil Analyzing Application

M Raasi[1] , G Santhisri[2] , M Sravya[3] ,Shaik Khaja Mohiddin Basha[4]
[1,2,3] Student,Computer Science and Engineering, Narasaraopeta Engineering College
Narasaraopeta India
[4] Assistant Professor, Computer Science and Engineering, Narasaraopeta Engineering College
Narasaraopeta, India

rasimathi21@gmail.com, santhisrigovind@gmail.com,sravya0478@gmail.com,sk.basha579@gmail.com

Abstract– Agriculture plays a predominant role in the economic growth and development of the country. The major and serious setback in the crop production is that the farmers do not choose the right crop for cultivation. In order to improve the crop productivity, a crop recommendation system and soil analyzing techniques is to be developed. The technique is used to build a model that combines the predictions of multiple machine learning models together to recommend the right crop based on the soil specific type and characteristics with high accuracy and soil condition. The dataset comprises of the soil specific physical and chemical characteristics in addition to the climatic conditions such as average rainfall and the surface temperature samples.

Keywords– soil condition, crop recommendation, Naive Bayes, KNN, and Agriculture

I. INTRODUCTION

India is one of the established nations that has agriculture as its primary source of income. Agriculture is one such domain that contributes only around 14% to the GDP but has a considerate amount of impact on the Indian economy. The conventional agricultural practices and techniques are posing a lot of issues in terms of efficiency, cost-effectiveness and resource utilization. There is a necessity of better techniques that can improve the standard of living of the farmers too. Over the years due to globalization, agriculture has evolved by adapting the latest technologies and techniques for a better standard of living. Among the technologies and techniques [1].

To predict the soil-quality we need to consideration of soil parameters such as chemical parameters, physical parameters and biological parameters. Soil analyzer allows the farmer to predict the quality of the soil. Soil analyzer allows the farmer to predict the quality of the soil. Agricultural domain has imbibed the machine-learning algorithm to produce efficient, cost-effective solutions to the difficulties faced by the farmers. Researchers can utilize simulations to lead early tests to assess how an assortment may perform when looked with changed sub-atmosphere, soil composes, climate designs, and different variables. Researchers in present day agribusiness are trying their speculations at a more prominent scale and making considerably more precise, ongoing forecasts[2].

The main objectives are Design a recommendation system for accurate crop selection based on the soil condition, rainfall and surface temperature parameters.

Design a model to know the soil condition in terms of the nutrients of the soil.

II.LITERATURE SURVEY

The authors [1] mainly shows the recommendation of the crop on nutrients like N(Nitrogen), P(Phosphorus), K(Potassium) and factors like rainfall, temperature and PH value of the soil. uses classifier Ensemble Framework, Tree based method (Random Forest), one probabilistic classifier (Naive Bayes), one Support vector (Linear Support Vector) [1]

The authors [3] mainly throws light on the implementation of a crop prediction system based on sensor networks that has been developed using IoT. Soil testing labs take a considerable amount of time in providing the results of the submitted soil samples. Hence the system claims that it helps the farmers to get a better crop prediction without any delay in the waiting period [3]. In the paper, the authors have mainly focused on analyzing the N(Nitrogen), P(Phosphorus), K(Potassium) contents in the soil sample collected for survey. The proposed method in the paper efficiently estimates the soil nutrients based on the data fetched by the sensor network. This enables in predicting the apt crop for that soil under test. The farmers need to enlist their NPK sensor with the fundamental server. The NPK extract the supplement level from the soil sample and refresh this information to the primary server through the raspberry pi unit[4]. In view of the readings got from the calculation makes predictions on the basis of the recorded information [8]. The major shortfalls in this implementation were the inefficiency of the crop prediction algorithm and major focus on the data collection through NPK sensor[3].

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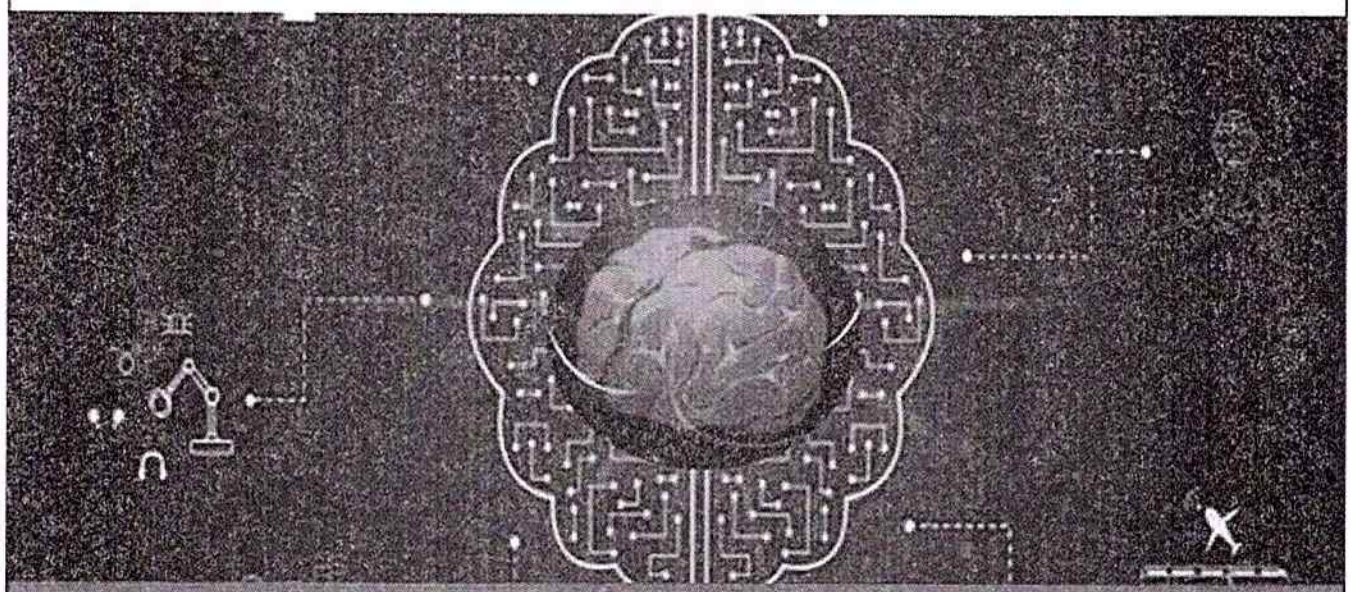

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24	ECG Classification With Convolutional Neural Networks - S V N Sreenivasu,T Bhargavika,B Anusha ,P Jayasri	124-129
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38	House Price Prediction - Bodlapati Sowmya Reddy.M. Yamini Priya. P. Manasa	209-213
39	Image Captioning Using Deep Learning - Y E V Pratap Kumar Kuchi.M.Sireesha. G. Sai Akhil.K. Hema Sai Mourya Gupta	214-219

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51	Music Recommendation Application Based On Facial Expressions - Ms Mohammad Arsha Sultana.Abdul Saherabegum, Akhila Umma, Guthula Jayasri Sai Nikitha	287-290
52	Mutual Fund Prediction Using Machine Learning - Shaik Nannu Saidavali.N.Vinay Chandra Pal, K.Bhaskar Reddy	291-295
53	Network Coding Techniques To Store The Data Securely In Cloud. - Guru Brahmam Madala, Vijay Anand R	296-301
54	Network Spam And Fake User Detection In Online Social Networks Using Support Vector Machine. - Majeti Pavan Kalyan.Anchula Sreekanth.Ravi Mahesh Babu.G. Sambasiva Rao	302-307
55	Next Word Prediction Using Recurrent Neural Networks - Srikanth Kolisetty.B. Venkateswarlu. S. Siva Sai Kumar. T. Uday Kumar	308-313

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56	Nobel Methodologies For Immigration Of Service Oriented Architecture Based Applications To Microservice Architecture - M Madhu Sudhan, P Indupriyankaray, Aelluri Lakshmi, M Sreenandan Reddy	314-317
57	Plant Leaf Disease Detection System Using Resnet-50 - Chappa.Ramya Sai,K.Kavya,K.Meghana,A.Tulasi	318-321
58	Predicting The Survival Of Patients With Heart Failure-Machine Learning Methods - Hemalatha Tatiparthi,G.Mounika,K.Prasanthi,G.Hemavani	322-329
59	Prediction Of Agriculture Yields Using Machine Learning Algorithms. - Katepalli Sai Sravanthi,Grandhisila Venkatanagalakshmipravallika,Kollipara Harika ,M. Mamatha	330-335
60	Prediction Of Covid 19 Epidemics Using Data Analytics - S.Anil Kumar,G.Sathar	336-343
61	Prediction Of Covid Readmissions Using Machine Learning - Athukuri Lakshmi Narendra Kumar,B.V.V.N.Sai Kumar	344-347
62	Rainfall Prediction Using Machine Learning - Anusha Bhavanam,Ch. Vyshnavi, Ch.Priyanka	348-353
63	Review On Load Balancing Using Cloud Computing - J Raghunath ,A Chandra Sekhar, Shaik Razia, D Venkatesh	354-362
64	Road Safety And Vehicle Accident Prevention - G.Gayatri,G.Gayatri,K.Sugunitha	363-367
65	Sensile Soil Analyzing Application - Mathi Raasi,G.Santhi Sri,M Sravya,Shaik Khaja Mohiddin Basha	368-373
66	Sentiment Analysis Of Movie Reviews Using Ml -Mukunda Gagula,Lakshma Reddy,Sai Venkatesh,Shaik Rafi	374-377
67	Supevised Learning Models for perception of Multi-Trafic Scene	378-383
68	Smart Parking System Using Web Application, - K Razeena Begum, S Anand, K Vivek, K Manideep	384-387

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69	Social Distance Monitoring Using Deep Learning - Satuluri Vijaya Lakshmi.K.K.N. Bhuvaneswari. B.Vijaya Lakshmi	388-398
70	Stock Value Prediction Using Regression - B.Jhansi Vazram. G.Venkatrao. D.Srtinivasa Reddy. V.Ashok Kumar	399-404
71	Summarized Reviews With Attention Mechanism Using Lstm - Tahfeem Shaik.Sirajuddin.Shaikrafi	405-408
72	Supervised Learning For Fraud And Malware Detection From Android Applications. - Tunuguntla Bala Bhaskar Rao .Dronadula Narendra. Maddu Phanindra Kumar.Dr. S.V.N.Srinivasu	409-415
73	Trust-Based Privacy Preserving Photo Sharing In Online Social Networks - Mrs R.Padmaja.Sk.Shahnoor. N.Nikhila. L.Thanusha	416-419
74	Useableness And Applications Of Blockchain Technology In Cloud Computing Environment - D Venkatesh.M Vijaya Bhaskar. J Raghunath. D Raghava Raju	420-426
75	Weather Prediction - Kotha Tharun Teja.G.Ashok.K.Raviteja.N.Raviteja	427-431
76	Wholesale And Retail Store Management System - Mr K Siva Rama Krishna.Saranya Bala.Y .Triveni.V . Sai Divya	432-435

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CSE 804

Sentiment Analysis of Movie Reviews Using ML

16

Mukunda Gagula [1], Lakshma Reddy Vatti [2], Sai Venkatesh Pulagam[3]
Shaik Rafi[4]

[1-3]*Student IV-year B. Tech, CSE, Narasaraopeta Engineering College, Narasaraopet, India*
[4]*Asst.Professor, CSE, Narasaraopeta Engineering College, Narasaraopet, India*

[1]mukunda8596@gmail.com [2]lakshmareddyvatti1999@gmail.com [4]shaikrafinrt@gmail.com

Abstract— **Sentiment analysis is the analysis of emotions and opinions from any form of text. Sentiment analysis is also termed as opinion mining. Sentiment analysis of the data is very useful to express the opinion of the mass or group or any individual. This technique is used to find the sentiment of the person with respect to a given source of content. Social media and other online platforms contain a huge amount of the data in the form of tweets, blogs, and updates on the status, posts, etc. In this paper, we have analyzed the Movie reviews using various techniques like Logestic Regression, SVM classifier and Random Forest.**

Keywords: RF,NB,SVM,LR

I. INTRODUCTION

Movie reviews are an important way to gauge the performance of a movie. While providing a numerical/stars rating to a movie tells us about the success or failure of a movie quantitatively, a collection of movie reviews is what gives us a deeper qualitative insight on different aspects of the movie. A textual movie review tells us about the strong and weak points of the movie and deeper analysis of a movie review can tell us if the movie in general meets the expectations of the reviewer. Sentiment Analysis is a major subject in machine learning which aims to extract subjective information from the textual reviews. The field of sentiment of analysis is closely tied to natural language processing and text mining. It can be used to determine the attitude of the reviewer with respect to various topics or the overall polarity of review. Using sentiment analysis, we can find the state of mind of the reviewer while providing the review and understand if the person was "happy", "sad". In this project we aim to use Sentiment Analysis on a set of movie reviews given by reviewers and try to understand what their overall reaction to the movie was, i.e. if they liked the movie or they hated it. We aim to utilize the relationships of the words in the review to predict the overall polarity of the review In last decade there is a rise of social media such as blogs and social networks, which has fulfilled the interest in sentiment analysis. Online opinion has turned into a kind of virtual currency with the proliferation of reviews, ratings, recommendations and other forms of online expression, for businesses that are looking to market their products, identify new opportunities and manage their reputations. In order to automate the process of filtering out the noise, understanding the conversations, identifying the relevant content and following appropriate actions, any are now looking to the field of sentiment analysis. The problem of most sentiment analysis algorithms is that they use simple terms to express sentiment about a product or service. However, cultural factors, sentence negation, sarcasm, terseness, language ambiguity and differing contexts make it extremely difficult to turn a Sentiment analysis is very popular because of its efficiency.
Thousands of documents can be processed for sentiment analysis. Since it is an efficient process which provides good accuracy, therefore it has various applications:

- Purchasing Merchandise or Service: While purchasing a merchandise or service we must take a right decision which is not a difficult task anymore. By sentiment analysis, people can easily evaluate reviews and opinions
- of any commodity or service and can effortlessly compare the competing brands.
- Quality Improvement in Product or Service: By Opinion mining, the producers can collect the user's opinion whether favourable or not about their product or service and then they can enhance and upgrade the quality of their product or service.
- Recommendation Systems: By analyzing and categorizing the people's opinion according to their preferences and interests, the system can predict which item should be recommended and which one should not be recommended.
- Decision Making: People's sentiments, ideas, feelings are very important factor to make a decision. While buying any item be it a book or clothes or electronic items user's first to read the opinions and reviews of that particular product and those reviews have a great impact on user's mind.

There are following phases of Sentiment Analysis:
Pre-Processing Phase: The data is first cleaned to reduce noise.
Feature Extraction: A token is given to the keywords and this token is now put under analysis.
Classification Phase: Based on different algorithms thesekeywords are put under certain category.

II. LITERATURE SURVEY

The original work on this dataset was done by researchers at Stanford University wherein they used unsupervised learning to cluster the words with close semantics and created word vectors. They ran various classification models on these word vectors to understand the polarity of the reviews. This approach is particularly useful in cases when the data has rich

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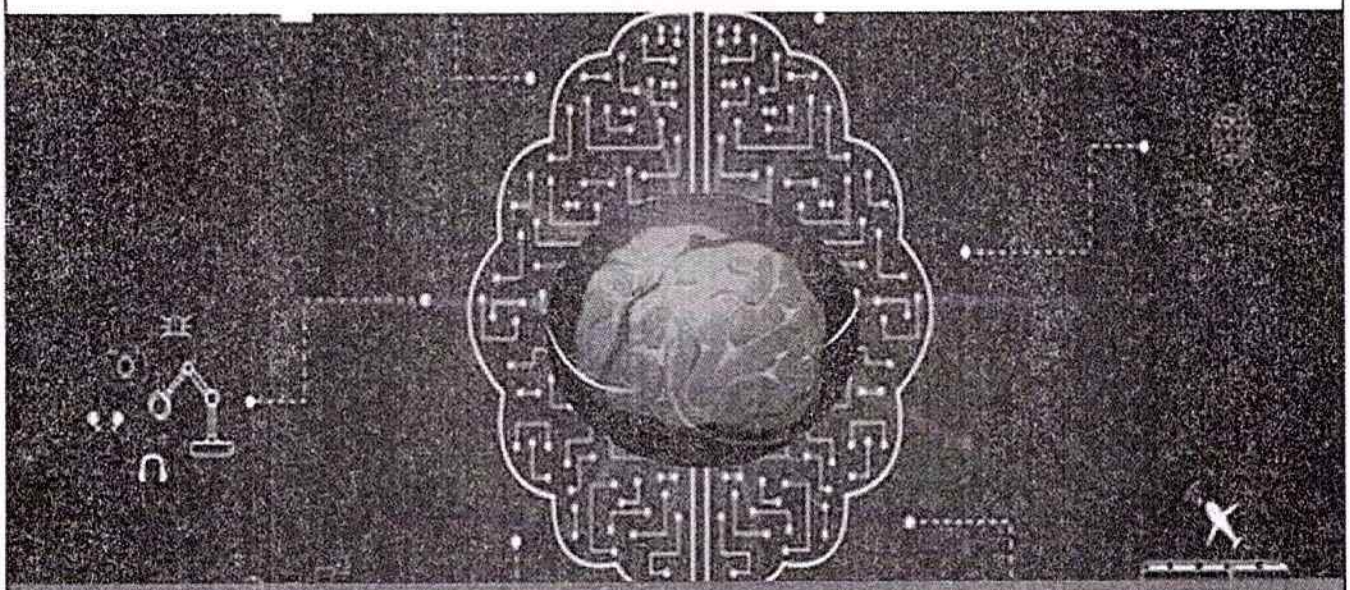

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REF. NO	TITLE OF THE PAPER AND AUTHOR(S)	Page No.
	Artificial Intelligence and Its Emerging Areas -NEC-ICAIIA 2K21	
1.	A Data Mining Based Model For Detection Of Deceitful Behaviour In Water Consumption - Tejasri Choudi,B.V.Satish, V.Naga Jyothi, K.Navya	1-5
2	A Machine Learning Framework For Prediction Of Heart Disease. Ramasetty Ramu,Kota Jagadeesh,Chanti Rajamohan Reddy,V. Mahesh Babu	6-10
3	A Supervised Learning Algorithm For Credit Card Fraud Detection. - Guggilam Sai Sri, Gummadilli Gouthami, Potluri Srividya, M. Mamatha	11-15
4	Amazon Product Review Sentiment Analysis Using Machine Learning - Ms Mohammad Arsha Sultana.P. Rakesh, M. Sandeep, G. Jagadeesh	16-20
5	An Interactive Study Of Thyroid Disease Prediction Using Machine Learning - D. Lokesh Gupta, D.Lokesh Gupta, K.V.Narasimha Reddy, D.Ramesh, V.Veerendra	21-25
6	Autoregressive Integrated Moving Average Model For Prediction Of Crypto Currency. - Pokuri Jaya Venkata Naga Sudhakar,Alladi Anil,Avula Venkata Rami Reddy,V. Mahesh Babu	26--29
7	Biometric Identification Scheme With Efficient Privacy-Preserving Mechanism For Cloud Computing Service. - Shaik Ruksana,Bandaru Naga Siva Saisuryatejaswi,Yadavalli Yedukondalu,M. Mamatha	30-34
8	Bitcoin Price Prediction -Mrs R.Padmaja,K.V.D Hanisha, B Amulya, M Harika	35-38
9	Calories Burned Prediction, - Niharika Motupalli, B.Siva Kanaka Raju Shaik Mehataj , U. Jhansi Rani, T .Bhavani	39-45
10	Cartoonize Image Using Deep Learning - Gouse Mastan Vali,D.Vamsi Krishna, A.Sairam,K.S.Lakshmi Narayana	46-54
11	Children Speech Recognition Using Machine Learning Methodologies - Dr.T.V.Sai Krishna, R Venkat	55-60

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12	Clarification Of Webbing Through Cloud Computing Technologies - Amara.S.A.L.G.Gopala Gupta,Dr. Gudapati Syam Prasad	61-65
13	Convolutional Lstm Model For Sentiment Analysis On Social Big Data - Raghuveer Pachipulusu,V.Ananth Reddy. R.Sai Kiran. T.Vignesh	66-72
14	Data Preprocessing For Efficient Prediction In Customer Relationship Management. - Patur Ganga. K.Arun	73-78
15	Design And Experimental Study Of Automatic Colour Sorting By A Robotic Arm System - T.Lakshmibai	79-82
16	Detection Of Autism Disorder Based On Eeg Signal Using Deep Learning Methods -Ranjani M.P.Supraja	83-87
17	Detection Of Online Public Shaming With Offensive Content On Twitter. - Gutta Sai Durga,Gopu Sandhya,Jonnalagadda Madhavi. Dr. S.V.N.Srinivasu	88-91
18	Detection Of Phishing Attacks Using Natural Language Processing And Logistic Regression Model. - Surubula Thirupathi Rao,Pothukuchi Mahesh Babu,Rayala Venu,V. Mahesh Babu	92-98
19	Detection Of Social Network Mental Disorders Through Mining Of Online Social Media. - Battula Venkata Ananta Mehar Gopi,Rajarapu Venu Babu,Maddineni Naveen ,Dr. S.V.N.Srinivasu	99-103
20	predections in healthy population through machine learning	104-108
21	Diabetics Prediction using Machine Learning Techniques. - Pathan Sajida. S.Amulya , V.Nandhini	109-114
22	DL-CNN Framework For Malicious Social Bots Detection. - Syed Fathima,Ponnapati Mallika,Gandru Akhilendra Chowdary,M. Mamatha	115-120
23	Door Security System Using Face Recognition -Dr A Srinivasa Rao,K.G.J.Prasanth, M. Rama Rao	121-123
24	ECG Classification With Convolutional Neural Networks - S V N Sreenivasu,T Bhargavika,B Anusha ,P Jayasri	124-129
25	Emotion Recognition From Multimodal Data(Speech. Video. Text) Based On Deep Learning Techniques - D.P.Supraja	130-137

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NARASARAOPET - 522 601.
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26	Estimation Of Population Analysis - Tarun.G.Tarun.T.Purnavamsi.K.Vivekreddy	138-142
27	Eye Ball Cursor Movement Using Opencv - B.Preethi.D.Bharadwaja.B.Preethi. K.Charithra Lavanya.N.Sony	143-147
28	Face.Age And Gender Recogntion System Based on Deep Neural Networks - Gudapati Syam Prasad.K.Narendra Babu.N.Hemanth Kumar.K.Sriniivas	148-154
29	Facial Expression Recognition With Convolutional Neural Networks - S. Siva Nageswara Rao.S.Ramya. T.Anantha Lavanya	155-162
30	Fake Currency Detection. - Mr.Sk.K.M.Basha , Yalagala Hema Latha. Gatakala Venkata Sravya Bhavani. Macharla Maitili	163-167
31	Fake News Detection - Gangasani Likitha. I. Navya Sri, D. Swetha	168-175
32	Fake News Detection Using Machine Learning - Srikanth Mylapalli.Mylapalli Ramesh	176-180
33	Forest Fires Detection Using Machine Learning Algorithms - N.S.Sesi Kiran.P. Lakshmi Narayana. Sk. Mastanvali. P. Nivas	181-185
34	Functioning Of Artificial Intelligence In An Self-Driving Vehicle - A Review -Penugonda Surya Teja.None	186-189
35	Generic Recommendation Engine Using Hybrid Filtering Model - G Prabhakara Reddy,O Ramesh. Ch Anil	190-200
36	Head Motion Detection - Dr A Srinivasa Rao.M.Prathyusha, Y.Rajeswari	201-203
37	Heart Disease Prediction Using Machine Learning - Jhansi Lakshmi Manukonda ,R. V. P. S. Rekha, T. Divya. G. L. N. Jayaprada	204-208
38	House Price Prediction - Bodlapati Sowmya Reddy.M. Yamini Priya. P. Manasa	209-213
39	Image Captioning Using Deep Learning - Y E V Pratap Kumar Kuchi.M.Sireesha. G. Sai Akhil. K. Hema Sai Mourya Gupta	214-219

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Guntur (Dist.), A.P.

40	Image Classification Using Object Detection With YOLO Algorithm. Shaik Bhadhar Shareef.Putchakayala Ramesh.Angajala Anil.G. Sambasiva Rao	220-223
41	Implementation Of Video Steganography Cryptography System For Iot-Based Cloud Computing Security. - Samvarapu Sagar Reddy,Mallavarapu Nikhil,Chevala Venkatesh,Dr. S.V.N.Srinivasu	224-228
42	Inform Me-Family Gps Locator - Oruganti Ramesh,G Prabhakara Reddy, Ch. Anil	229-233
43	Ipl Score Prediction Using Machine Learning Methods - Rajyalakshmi Dondapati,N.Likitha,M.Anmisha	234-241
44	Liver Disease Prediction Using Machine Learning Methods - Sravana Sandhya Rani Karnati,K. Sravana Sandhya Rani, B.V.Gayithri,K.Vijayalakshmi	242-249
45	Loan Prediction System - Divya Gopavarapu,K.Manasa,A.Akhila,M.Sireesha	250-255
46	Lung Cancer Prediction - Naga Mallika Gude,M. Navya Sri, B. Sukanya	256-263
47	Map Reduced Segmentation Clustering For Big Data Analytics Using Extended K-Mean Clustering Technique - Mvs.Prasad	264-270
48	Mask R-Cnn For Fire Detection - Razeena Begum Shaik,S Yogananda Datta , M S V Manoj	271-276
49	Melanoma Prediction Using Deep Learning - Aishwarya Nallapati,D. Jaya Tejaswini, J. Prashanthi, T. Siri Chandana	277-280
50	Multilevel Hierarchy Based Privacy Preserved Profile Publishing In Cloud Environment. - Esthala Abhishek,Kambhampati Adinarayana,Battula Ramesh,G. Sambasiva Rao	281-286
51	Music Recommendation Application Based On Facial Expressions - Ms Mohammad Arsha Sultana,Abdul Saherabegum, Akhila Umma, Guthula Jayasri Sai Nikitha	287-290
52	Mutual Fund Prediction Using Machine Learning - Shaik Nannu Saidavali,N.Vinay Chandra Pal, K.Bhaskar Reddy	291-295
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59	Prediction Of Agriculture Yields Using Machine Learning Algorithms. - Katepalli Sai Sravanthi,Grandhisila Venkatanagalakshmipravallika,Kollipara Harika ,M. Mamatha	330-335
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CSE 024

Stock Value Prediction using Regression

[1]Dr. B. Jhansi Vazram M.Tech, Ph.D.
Professor of CSE, Narasaraopeta Engineering College, Narasaraopet, India .
Jhansi.bolla@gmail.com
[2]Gonuguntla Venkatrao
Venkatgonu200092@gmail.com
Durgempudi Srinivasa Reddy
Srinivasdurgempudi1725@gmail.com
Vaka Ashok Kumar
ashoksunny9440@gmail.com

Abstract — Stock price prediction has always attracted people interested to put investment on stock you will get benefits from the Stock. It is a very important topic Stock finance. Stock market price depends upon so many factors in the market. Stock market price are effecting so many issues in the market/place like political issues and social issues . we are predict the stock prices using simple regression techniques and find accuracy, index values and daily data analysis. We have to use simple process for finding the future prizes in the market with less time and less work. We are using the simple mathematical models for finding the errors . In this paper we investigate to predict the stock prices using regressive models like linear regression, ridge etc. The linear regression model is used because of its studied accuracy of the prediction by comparing the predicted values with the actual values over a period of time. We had go to Check and study the Literacy survey.

Index terms: stock data, regression techniques, python.

I.INTRODUCTION:

Prediction of Stock market returns is returns important information about organization finance. The prediction of stock prices has a Challenging task that's why we have to apply more Regression Techniques to predict the accuracy. Predict the stock price Is now a days very difficult because of billions of data available in the market. Stock price depends upon every company price will be decreasing or increasing the day of the price depends upon the stock. It plays key role in the country Development, political, news and some natural disasters. A lot of studies were performed for the prediction of stock index values as well as the daily direction of change in the index. The stock price depends upon how many people buy or invest and how many people sell their properties to specify the stock price. In The stock prediction many people want to buy a stock, then the price will go up. We have to use only Regression models and it is having so many models to predict the price. If any one invest the money in the stock market to analyze weather the stock price is going to increase or decrease in the couple of days. In the stock market economy is depends upon two variables such as rate interest and rate exchanging in the industry formats. In the stock market more sellers are coming then the price of the stock in goes down. So, many

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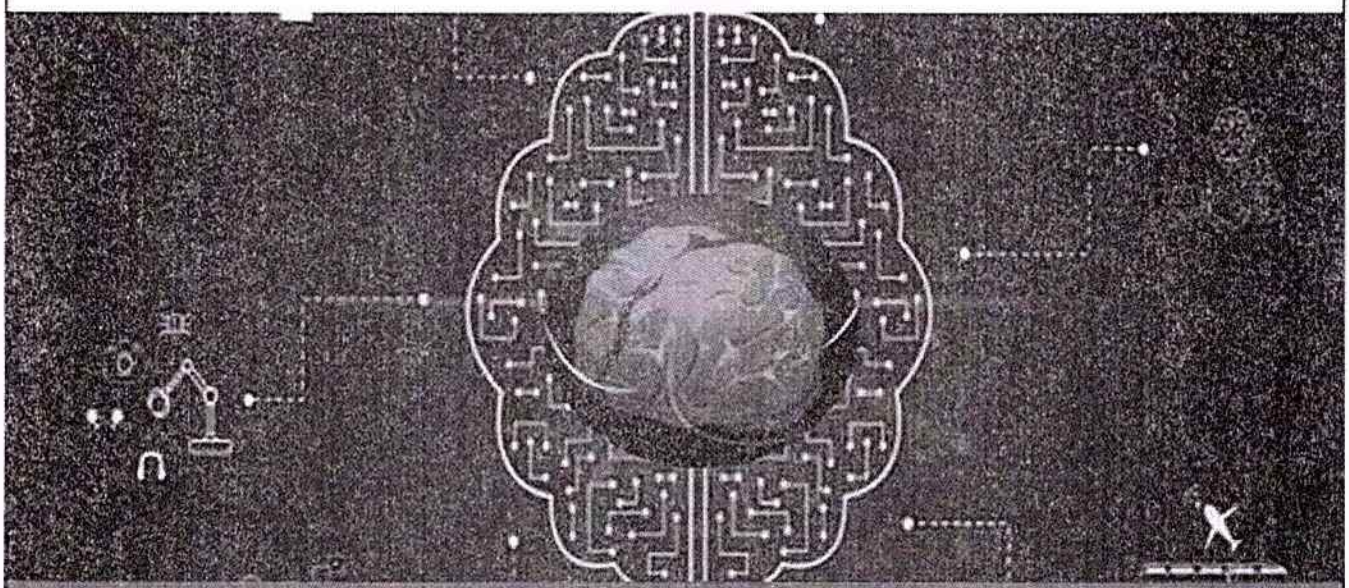

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1.	A Data Mining Based Model For Detection Of Deceitful Behaviour In Water Consumption - Tejasri Choudi.B.V.Satish, V.Naga Jyothi, K.Navya	1-5
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4	Amazon Product Review Sentiment Analysis Using Machine Learning - Ms Mohammad Arsha Sultana.P. Rakesh, M. Sandeep, G. Jagadeesh	16-20
5	An Interactive Study Of Thyroid Disease Prediction Using Machine Learning - D. Lokesh Gupta, D.Lokesh Gupta, K.V.Narasimha Reddy, D.Ramesh, V.Veerendra	21-25
6	Autoregressive Integrated Moving Average Model For Prediction Of Crypto Currency, - Pokuri Jaya Venkata Naga Sudhakar.Alladi Anil.Avula Venkata Rami Reddy.V. Mahesh Babu	26--29
7	Biometric Identification Scheme With Efficient Privacy-Preserving Mechanism For Cloud Computing Service, - Shaik Ruksana,Bandaru Naga Siva Saisuryatejaswi,Yadavalli Yedukondalu,M. Mamatha	30-34
8	Bitcoin Price Prediction -Mrs R.Padmaja,K.V.D Hanisha, B Amulya, M Harika	35-38
9	Calories Burned Prediction, - Niharika Motupalli, B.Siva Kanaka Raju Shaik Mehataj , U. Jhansi Rani, T .Bhavani	39-45
10	Cartoonize Image Using Deep Learning - Gouse Mastan Vali.D.Vamsi Krishna, A.Sairam.K.S.Lakshmi Narayana	46-54
11	Children Speech Recognition Using Machine Learning Methodologies - Dr.T.V.Sai Krishna, R Venkat	55-60

IQAC

Principal
NARASARAOPETA ENGINEERING COLLEGE
(AUTONOMOUS)
NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

12	Clarification Of Webbing Through Cloud Computing Technologies - Amara.S.A.L.G.Gopala Gupta,Dr. Gudapati Syam Prasad	61-65
13	Convolutional Lstm Model For Sentiment Analysis On Social Big Data - Raghuveer Pachipulusu,V.Ananth Reddy, R.Sai Kiran, T.Vignesh	66-72
14	Data Preprocessing For Efficient Prediction In Customer Relationship Management, - Patur Ganga, K.Arun	73-78
15	Design And Experimental Study Of Automatic Colour Sorting By A Robotic Arm System - T.Lakshmibai	79-82
16	Detection Of Autism Disorder Based On Eeg Signal Using Deep Learning Methods -Ranjani M.P.Supraja	83-87
17	Detection Of Online Public Shaming With Offensive Content On Twitter, - Gutta Sai Durga,Gopu Sandhya,Jonnalagadda Madhavi, Dr. S.V.N.Srinivasu	88-91
18	Detection Of Phishing Attacks Using Natural Language Processing And Logistic Regression Model, - Surubula Thirupathi Rao,Pothukuchi Mahesh Babu,Rayala Venu,V. Mahesh Babu	92-98
19	Detection Of Social Network Mental Disorders Through Mining Of Online Social Media, - Battula Venkata Ananta Mehar Gopi,Rajarapu Venu Babu,Maddineni Naveen ,Dr. S.V.N.Srinivasu	99-103
20	predections in healthy population through machine learning	104-108
21	Diabetics Prediction using Machine Learning Techniques, - Pathan Sajida, S.Amulya , V.Nandhini	109-114
22	DL-CNN Framework For Malicious Social Bots Detection, - Syed Fathima,Ponnapati Mallika,Gandru Akhilendra Chowdary,M. Mamatha	115-120
23	Door Security System Using Face Recognition -Dr A Srinivasa Rao,K.G.J.Prasanth, M. Rama Rao	121-123
24	ECG Classification With Convolutional Neural Networks - S V N Sreenivasu,T Bhargavika,B Anusha ,P Jayasri	124-129
25	Emotion Recognition From Multimodal Data(Speech, Video, Text) Based On Deep Learning Techniques D.P.Supraja	130-137

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NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

26	Estimation Of Population Analysis - Tarun.G.Tarun.T.Purnavamsi.K.Vivekreddy	138-142
27	Eye Ball Cursor Movement Using Opencv - B.Preethi.D.Bharadwaja.B.Preethi. K.Charithra Lavanya.N.Sony	143-147
28	Face.Age And Gender Recogntion System Based on Deep Neural Networks - Gudapati Syam Prasad.K.Narendra Babu.N.Hemanth Kumar.K.Sriniivas	148-154
29	Facial Expression Recognition With Convolutional Neural Networks - S. Siva Nageswara Rao.S.Ramya. T.Anantha Lavanya	155-162
30	Fake Currency Detection. - Mr.Sk.K.M.Basha , Yalagala Hema Latha. Gatakala Venkata Sravya Bhavani. Macharla Maitili	163-167
31	Fake News Detection - Gangasani Likitha. I. Navya Sri. D. Swetha	168-175
32	Fake News Detection Using Machine Learning - Srikanth Mylapalli.Mylapalli Ramesh	176-180
33	Forest Fires Detection Using Machine Learning Algorithms - N.S.Sesi Kiran.P. Lakshmi Narayana. Sk. Mastanvali. P. Nivas	181-185
34	Functioning Of Artificial Intelligence In An Self-Driving Vehicle - A Review -Penugonda Surya Teja.None	186-189
35	Generic Recommendation Engine Using Hybrid Filtering Model - G Prabhakara Reddy.O Ramesh. Ch Anil	190-200
36	Head Motion Detection - Dr A Srinivasa Rao.M.Prathyusha. Y.Rajeswari	201-203
37	Heart Disease Prediction Using Machine Learning - Jhansi Lakshmi Manukonda .R. V. P. S. Rekha. T. Divya. G. L. N. Jayaprada	204-208
38	House Price Prediction - Bodlapati Sowmya Reddy.M. Yamini Priya. P. Manasa	209-213
39	Image Captioning Using Deep Learning - Y E V Pratap Kumar Kuchi.M.Sireesha. G. Sai Akhil. K. Hema Sai Mourya Gupta	214-219

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NARASARAOPETA ENGINEERING COLLEGE
(AUTONOMOUS)
NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

40	Image Classification Using Object Detection With YOLO Algorithm. Shaik Bhadhar Shareef.Putchakayala Ramesh.Angajala Anil.G. Sambasiva Rao	220-223
41	Implementation Of Video Steganography Cryptography System For Iot-Based Cloud Computing Security. - Samvarapu Sagar Reddy.Mallavarapu Nikhil.Chevala Venkatesh.Dr. S.V.N.Srinivasu	224-228
42	Inform Me-Family Gps Locator - Oruganti Ramesh.G Prabhakara Reddy. Ch. Anil	229-233
43	Ipl Score Prediction Using Machine Learning Methods - Rajyalakshmi Dondapati.N.Likitha.M.Anmisha	234-241
44	Liver Disease Prediction Using Machine Learning Methods - Sravana Sandhya Rani Karnati.K. Sravana Sandhya Rani, B.V.Gayithri.K.Vijayalakshmi	242-249
45	Loan Prediction System - Divya Gopavarapu.K.Manasa.A.Akhila.M.Sireesha	250-255
46	Lung Cancer Prediction - Naga Mallika Gude.M. Navya Sri, B. Sukanya	256-263
47	Map Reduced Segmentation Clustering For Big Data Analytics Using Extended K-Mean Clustering Technique - Mvs.Prasad	264-270
48	Mask R-Cnn For Fire Detection - Razeena Begum Shaik.S Yogananda Datta , M S V Manoj	271-276
49	Melanoma Prediction Using Deep Learning - Aishwarya Nallapati,D. Jaya Tejaswini, J. Prashanthi, T. Siri Chandana	277-280
50	Multilevel Hierarchy Based Privacy Preserved Profile Publishing In Cloud Environment. - Esthala Abhishek.Kambhampati Adinarayana.Battula Ramesh.G. Sambasiva Rao	281-286
51	Music Recommendation Application Based On Facial Expressions - Ms Mohammad Arsha Sultana.Abdul Saherabegum, Akhila Umma, Guthula Jayasri Sai Nikitha	287-290
52	Mutual Fund Prediction Using Machine Learning - Shaik Nannu Saidavali.N.Vinay Chandra Pal, K.Bhaskar Reddy	291-295
53	Network Coding Techniques To Store The Data Securely In Cloud. - Guru Brahmam Madala, Vijay Anand R	296-301
54	Network Spam And Fake User Detection In Online Social Networks Using Support Vector Machine. - Majeti Pavan Kalyan.Anchula Sreekanth.Ravi Mahesh Babu.G. Sambasiva Rao	302-307
55	Next Word Prediction Using Recurrent Neural Networks - Srikanth Kolisetty.B. Venkateswarlu, S. Siva Sai Kumar, T. Uday Kumar	308-313

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56	Nobel Methodologies For Immigration Of Service Oriented Architecture Based Applications To Microservice Architecture - M Madhu Sudhan, P Indupriyankaray, Aelluri Lakshmi, M Sreenandan Reddy	314-317
57	Plant Leaf Disease Detection System Using Resnet-50 - Chappa.Ramya Sai,K.Kavya,K.Meghana,A.Tulasi	318-321
58	Predicting The Survival Of Patients With Heart Failure-Machine Learning Methods - Hemalatha Tatiparthi,G.Mounika,K.Prasanthi,G.Hemavani	322-329
59	Prediction Of Agriculture Yields Using Machine Learning Algorithms. - Katepalli Sai Sravanthi,Grandhisila Venkatanagalakshmipravallika,Kollipara Harika ,M. Mamatha	330-335
60	Prediction Of Covid 19 Epidemics Using Data Analytics - S.Anil Kumar,G.Sathar	336-343
61	Prediction Of Covid Readmissions Using Machine Learning - Athukuri Lakshmi Narendra Kumar,B.V.V.N.Sai Kumar	344-347
62	Rainfall Prediction Using Machine Learning - Anusha Bhavanam,Ch. Vyshnavi, Ch.Priyanka	348-353
63	Review On Load Balancing Using Cloud Computing - J Raghunath ,A Chandra Sekhar, Shaik Razia, D Venkatesh	354-362
64	Road Safety And Vehicle Accident Prevention - G.Gayatri,G.Gayatri,K.Sugunitha	363-367
65	Sensile Soil Analyzing Application - Mathi Raasi,G.Santhi Sri,M Sravya,Shaik Khaja Mohiddin Basha	368-373
66	Sentiment Analysis Of Movie Reviews Using Ml -Mukunda Gagula,Lakshma Reddy,Sai Venkatesh,Shaik Rafi	374-377
67	Supevised Learning Models for perception of Multi-Trafic Scene	378-383
68	Smart Parking System Using Web Application, - K Razeena Begum, S Anand, K Vivek, K Manideep	384-387

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NARASARAOPETA ENGINEERING COLLEGE
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Guntur (Dist.), A.P.

69	Social Distance Monitoring Using Deep Learning - Satuluri Vijaya Lakshmi.K.K.N. Bhuvaneswari. B.Vijaya Lakshmi	388-398
70	Stock Value Prediction Using Regression - B.Jhansi Vazram. G.Venkatrao. D.Srtinivasa Reddy. V.Ashok Kumar	399-404
71	Summarized Reviews With Attention Mechanism Using Lstm - Tahfeem Shaik.Sirajuddin.Shaikrafi	405-408
72	Supervised Learning For Fraud And Malware Detection From Android Applications. - Tunuguntla Bala Bhaskar Rao ,Dronadula Narendra. Maddu Phanindra Kumar.Dr. S.V.N.Srinivasu	409-415
73	Trust-Based Privacy Preserving Photo Sharing In Online Social Networks - Mrs R.Padmaja.Sk.Shahnoor. N.Nikhila. L.Thanusha	416-419
74	Useableness And Applications Of Blockchain Technology In Cloud Computing Environment - D Venkatesh.M Vijaya Bhaskar. J Raghunath. D Raghava Raju	420-426
75	Weather Prediction - Kotha Tharun Teja.G.Ashok.K.Raviteja.N.Raviteja	427-431
76	Wholesale And Retail Store Management System - Mr K Siva Rama Krishna.Saranya Bala.Y ,Triveni.V , Sai Divya	432-435

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Supervised Learning for Fraud and Malware Detection from Android Applications

TUNUGUNTLA BALA BHASKAR RAO[1], DRONADULA NARENDRA[2], MADDU PHANINDRA KUMAR[3], Dr. S.V.N.SRINIVASU[4]
bhaskarguptha002@gmail.com[1], dronadulanarendra2018@gmail.com[2], madduphanindra@gmail.com[3], drsvnsrinivasu@gmail.com[4]
[1,2,3]student,Department of MCA, Narasaraopeta Engineering College,
[4]Professor, Department of MCA, Narasaraopeta Engineering College

Abstract

At present, everyone is dependent upon its Smartphone for banking, communication, business, gaming and many more functionalities. But, Ransomware is one of today's most severe Internet security challenges and also Android applications also effective by the various types of Trojan attacks respectively. Indeed, most Internet issues, including spam e-mails and denial of service attacks, are triggered by malware and android applications also facing this issue. In many words, Smartphone's that are infected by Ransomware are also networked into botnets, and often assaults are performed on hostile, assaulting networks. From untrusted internet sites may be likely to contribute to maladministration. These executables are changed intelligently to circumvent antivirus specifications by anomalous users. In this article, an improved identification approach for harmful executables is suggested by evaluating Portable Executable (PE) executable files and utilizing an extraction process for support vector machine (SVM) classification. We also learned a supervised binary classifier using these features from regular and malicious PE data on Android applications. We have checked our system on a comprehensive publicly accessible dataset and obtained a rating maximum accuracy compared to the state of art approaches respectively.

Keywords: Machine Learning, E-mails, Networks, Malware Analysis, Feature Extraction, SVM and feature extraction.

1. Introduction

Usage of smart phones is increasing day by day in human life. At present, everyone is dependent upon its Smartphone for banking, communication, business, gaming and many more functionalities [1]. According to the statics at the end of 2020 *, there are 3.5 billion users for smart phones throughout the world. Android has gained its popularity due to its open nature and a large number (2,870,000) of apps present in its official play store at the end of March 2020 †. Due to these reasons, Android have 74.13% ffi market share and become famous in the world. By taking advantage of its open-nature, freely availability of its Android apps and its permission model, cybercriminals are developing malware-infected apps on a daily basis. By using malware-infected apps [2], cyber crooks take the personal information of users such as passwords, banking account details etc. for their benefits. According to the report published by Kaspersky §, there are 3,503,952malware packages, 68,362 Ransomware Trojans and 69,777 banking Trojans present in Android devices [3].

The malwares can be classified into different categories according to their functionalities as follows:

Spyware:-Spyware is software program that securely gathers information and sends it without user information [4].

- **Trojan:**-Trojan acts like a lawful app which can execute malevolent activities without the familiarity of the user and can steal significant details such as user passwords, credit card information etc [5].

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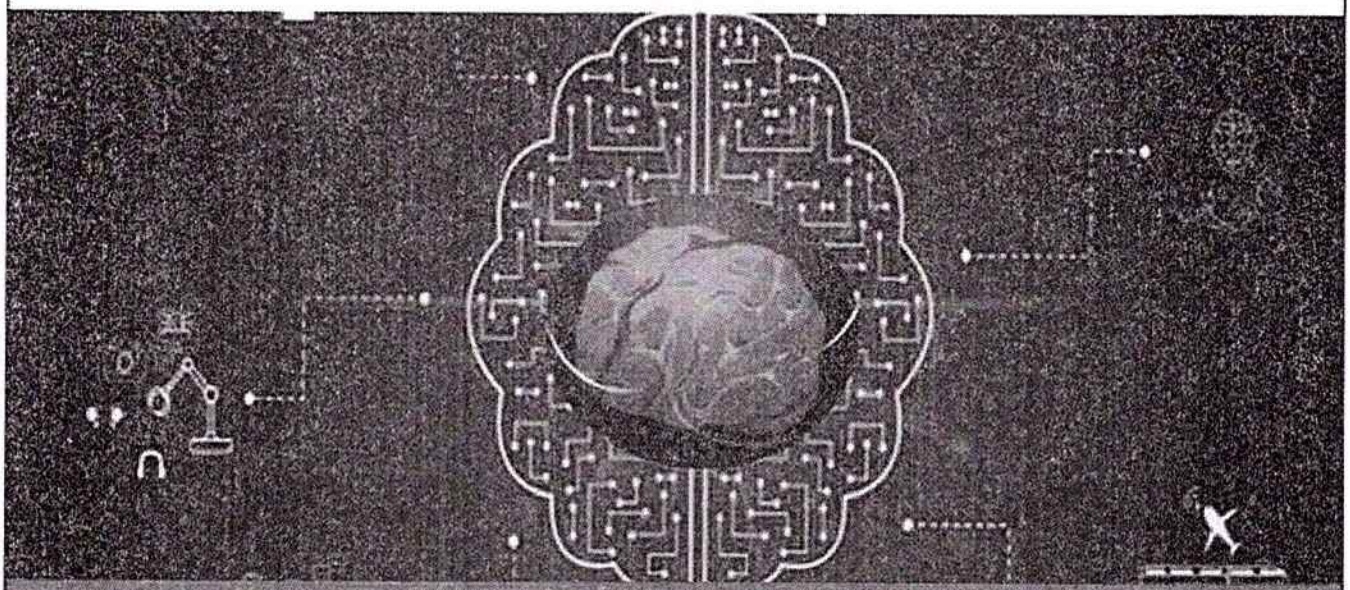

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International Conference On

Artificial Intelligence and Its Emerging Areas

-

REF. NO	TITLE OF THE PAPER AND AUTHOR(S)	Page No.
	Artificial Intelligence and Its Emerging Areas -NEC-ICAIIA 2K21	
1.	A Data Mining Based Model For Detection Of Deceitful Behaviour In Water Consumption - Tejasri Choudi,B.V.Satish, V.Naga Jyothi, K.Navya	1-5
2	A Machine Learning Framework For Prediction Of Heart Disease. Ramasetty Ramu,Kota Jagadeesh.Chanti Rajamohan Reddy,V. Mahesh Babu	6-10
3	A Supervised Learning Algorithm For Credit Card Fraud Detection. - Guggilam Sai Sri, Gummadilli Gouthami, Potluri Srividya, M. Mamatha	11-15
4	Amazon Product Review Sentiment Analysis Using Machine Learning - Ms Mohammad Arsha Sultana,P. Rakesh, M. Sandeep, G. Jagadeesh	16-20
5	An Interactive Study Of Thyroid Disease Prediction Using Machine Learning - D. Lokesh Gupta, D.Lokesh Gupta, K.V.Narasimha Reddy, D.Ramesh, V.Veerendra	21-25
6	Autoregressive Integrated Moving Average Model For Prediction Of Crypto Currency. - Pokuri Jaya Venkata Naga Sudhakar,Alladi Anil,Avula Venkata Rami Reddy,V. Mahesh Babu	26--29
7	Biometric Identification Scheme With Efficient Privacy-Preserving Mechanism For Cloud Computing Service. - Shaik Ruksana,Bandaru Naga Siva Saisuryatejaswi,Yadavalli Yedukondalu,M. Mamatha	30-34
8	Bitcoin Price Prediction -Mrs R.Padmaja,K.V.D Hanisha, B Amulya, M Harika	35-38
9	Calories Burned Prediction, - Niharika Motupalli, B.Siva Kanaka Raju Shaik Mehataj , U. Jhansi Rani, T .Bhavani	39-45
10	Cartoonize Image Using Deep Learning - Gouse Mastan Vali,D.Vamsi Krishna, A.Sairam,K.S.Lakshmi Narayana	46-54
11	Children Speech Recognition Using Machine Learning Methodologies - Dr.T.V.Sai Krishna, R Venkat	55-60

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Guntur (Dist.), A.P.

12	Clarification Of Webbing Through Cloud Computing Technologies - Amara.S.A.L.G.Gopala Gupta,Dr. Gudapati Syam Prasad	61-65
13	Convolutional Lstm Model For Sentiment Analysis On Social Big Data - Raghuveer Pachipulusu,V.Ananth Reddy. R.Sai Kiran. T.Vignesh	66-72
14	Data Preprocessing For Efficient Prediction In Customer Relationship Management. - Patur Ganga. K.Arun	73-78
15	Design And Experimental Study Of Automatic Colour Sorting By A Robotic Arm System - T.Lakshmibai	79-82
16	Detection Of Autism Disorder Based On Eeg Signal Using Deep Learning Methods -Ranjani M.P.Supraja	83-87
17	Detection Of Online Public Shaming With Offensive Content On Twitter. - Gutta Sai Durga,Gopu Sandhya,Jonnalagadda Madhavi. Dr. S.V.N.Srinivasu	88-91
18	Detection Of Phishing Attacks Using Natural Language Processing And Logistic Regression Model. - Surubula Thirupathi Rao,Pothukuchi Mahesh Babu,Rayala Venu,V. Mahesh Babu	92-98
19	Detection Of Social Network Mental Disorders Through Mining Of Online Social Media. - Battula Venkata Ananta Mehar Gopi,Rajarapu Venu Babu,Maddineni Naveen ,Dr. S.V.N.Srinivasu	99-103
20	predections in healthy population through machine learning	104-108
21	Diabetics Prediction using Machine Learning Techniques. - Pathan Sajida. S.Amulya , V.Nandhini	109-114
22	DL-CNN Framework For Malicious Social Bots Detection. - Syed Fathima,Ponnapati Mallika,Gandru Akhilendra Chowdary,M. Mamatha	115-120
23	Door Security System Using Face Recognition -Dr A Srinivasa Rao,K.G.J.Prasanth, M. Rama Rao	121-123
24	ECG Classification With Convolutional Neural Networks - S V N Sreenivasu,T Bhargavika,B Anusha ,P Jayasri	124-129
25	Emotion Recognition From Multimodal Data(Speech, Video, Text) Based On Deep Learning Techniques - D.P.Supraja	130-137

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26	Estimation Of Population Analysis - Tarun.G.Tarun.T.Purnavamsi.K.Vivekreddy	138-142
27	Eye Ball Cursor Movement Using Opencv - B.Preethi.D.Bharadwaja.B.Preethi. K.Charithra Lavanya.N.Sony	143-147
28	Face.Age And Gender Recogntion System Based on Deep Neural Networks - Gudapati Syam Prasad.K.Narendra Babu.N.Hemanth Kumar.K.Sriniivas	148-154
29	Facial Expression Recognition With Convolutional Neural Networks - S. Siva Nageswara Rao.S.Ramya. T.Anantha Lavanya	155-162
30	Fake Currency Detection. - Mr.Sk.K.M.Basha , Yalagala Hema Latha. Gatakala Venkata Sravya Bhavani. Macharla Maitili	163-167
31	Fake News Detection - Gangasani Likitha. I. Navya Sri. D. Swetha	168-175
32	Fake News Detection Using Machine Learning - Srikanth Mylapalli,Mylapalli Ramesh	176-180
33	Forest Fires Detection Using Machine Learning Algorithms - N.S.Sesi Kiran.P. Lakshmi Narayana. Sk. Mastanvali. P. Nivas	181-185
34	Functioning Of Artificial Intelligence In An Self-Driving Vehicle - A Review -Penugonda Surya Teja.None	186-189
35	Generic Recommendation Engine Using Hybrid Filtering Model - G Prabhakara Reddy,O Ramesh. Ch Anil	190-200
36	Head Motion Detection - Dr A Srinivasa Rao.M.Prathyusha. Y.Rajeswari	201-203
37	Heart Disease Prediction Using Machine Learning - Jhansi Lakshmi Manukonda ,R. V. P. S. Rekha. T. Divya. G. L. N. Jayaprada	204-208
38	House Price Prediction - Bodlapati Sowmya Reddy.M. Yamini Priya. P. Manasa	209-213
39	Image Captioning Using Deep Learning - Y E V Pratap Kumar Kuchi.M.Sireesha. G. Sai Akhil. K. Hema Sai Mourya Gupta	214-219

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NARASARAOPET - 522 601
Guntur (Dist.), A.P.

40	Image Classification Using Object Detection With YOLO Algorithm. Shaik Bhadhar Shareef.Putchakayala Ramesh.Angajala Anil.G. Sambasiva Rao	220-223
41	Implementation Of Video Steganography Cryptography System For Iot-Based Cloud Computing Security. - Samvarapu Sagar Reddy.Mallavarapu Nikhil.Chevala Venkatesh.Dr. S V N Srinivasu	224-228
42	Inform Me-Family Gps Locator - Oruganti Ramesh.G Prabhakara Reddy. Ch. Anil	229-233
43	Ipl Score Prediction Using Machine Learning Methods - Rajyalakshmi Dondapati.N.Likitha.M.Anmisha	234-241
44	Liver Disease Prediction Using Machine Learning Methods - Sravana Sandhya Rani Karnati.K. Sravana Sandhya Rani, B.V.Gayithri.K.Vijayalakshmi	242-249
45	Loan Prediction System - Divya Gopavarapu.K.Manasa.A.Akhila.M.Sireesha	250-255
46	Lung Cancer Prediction - Naga Mallika Gude.M. Navya Sri. B. Sukanya	256-263
47	Map Reduced Segmentation Clustering For Big Data Analytics Using Extended K-Mean Clustering Technique - Mvs.Prasad	264-270
48	Mask R-Cnn For Fire Detection - Razeena Begum Shaik.S Yogananda Datta . M S V Manoj	271-276
49	Melanoma Prediction Using Deep Learning - Aishwarya Nallapati.D. Jaya Tejaswini. J. Prashanthi. T. Siri Chandana	277-280
50	Multilevel Hierarchy Based Privacy Preserved Profile Publishing In Cloud Environment. - Esthala Abhishek.Kambhampati Adinarayana.Battula Ramesh.G. Sambasiva Rao	281-286
51	Music Recommendation Application Based On Facial Expressions - Ms Mohammad Arsha Sultana.Abdul Saherabegum. Akhila Umma. Guthula Jayasri Sai Nikitha	287-290
52	Mutual Fund Prediction Using Machine Learning - Shaik Nannu Saidavali.N.Vinay Chandra Pal. K.Bhaskar Reddy	291-295
53	Network Coding Techniques To Store The Data Securely In Cloud. - Guru Brahmam Madala. Vijay Anand R	296-301
54	Network Spam And Fake User Detection In Online Social Networks Using Support Vector Machine. - Majeti Pavan Kalyan.Anchula Sreekanth.Ravi Mahesh Babu.G. Sambasiva Rao	302-307
55	Next Word Prediction Using Recurrent Neural Networks - Srikanth Kolisetty.B. Venkateswarlu. S. Siva Sai Kumar. T. Uday Kumar	308-313

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56	Nobel Methodologies For Immigration Of Service Oriented Architecture Based Applications To Microservice Architecture - M Madhu Sudhan, P Indupriyankaray, Aelluri Lakshmi, M Sreenandan Reddy	314-317
57	Plant Leaf Disease Detection System Using Resnet-50 - Chappa.Ramya Sai,K.Kavya,K.Meghana,A.Tulasi	318-321
58	Predicting The Survival Of Patients With Heart Failure-Machine Learning Methods - Hemalatha Tatiparthi,G.Mounika,K.Prasanthi,G.Hemavani	322-329
59	Prediction Of Agriculture Yields Using Machine Learning Algorithms. - Katepalli Sai Sravanthi,Grandhisila Venkatanagalakshmipravallika,Kollipara Harika ,M. Mamatha	330-335
60	Prediction Of Covid 19 Epidemics Using Data Analytics - S.Anil Kumar,G.Sathar	336-343
61	Prediction Of Covid Readmissions Using Machine Learning - Athukuri Lakshmi Narendra Kumar,B.V.V.N.Sai Kumar	344-347
62	Rainfall Prediction Using Machine Learning - Anusha Bhavanam,Ch. Vyshnavi, Ch.Priyanka	348-353
63	Review On Load Balancing Using Cloud Computing - J Raghunath ,A Chandra Sekhar, Shaik Razia, D Venkatesh	354-362
64	Road Safety And Vehicle Accident Prevention - G.Gayatri,G.Gayatri,K.Sugunitha	363-367
65	Sensile Soil Analyzing Application - Mathi Raasi,G.Santhi Sri,M Sravya,Shaik Khaja Mohiddin Basha	368-373
66	Sentiment Analysis Of Movie Reviews Using Ml -Mukunda Gagula,Lakshma Reddy,Sai Venkatesh,Shaik Rafi	374-377
67	Supevised Learning Models for perception of Multi-Trafic Scene	378-383
68	Smart Parking System Using Web Application, - K Razeena Begum, S Anand, K Vivek, K Manideep	384-387

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69	Social Distance Monitoring Using Deep Learning - Satuluri Vijaya Lakshmi.K.K.N. Bhuvaneswari. B.Vijaya Lakshmi	388-398
70	Stock Value Prediction Using Regression - B.Jhansi Vazram. G.Venkatrao. D.Srtinivasa Reddy. V.Ashok Kumar	399-404
71	Summarized Reviews With Attention Mechanism Using Lstm - Tahfeem Shaik,Sirajuddin,Shaikrafi	405-408
72	Supervised Learning For Fraud And Malware Detection From Android Applications. - Tunuguntla Bala Bhaskar Rao ,Dronadula Narendra. Maddu Phanindra Kumar,Dr. S.V.N.Srinivasu	409-415
73	Trust-Based Privacy Preserving Photo Sharing In Online Social Networks - Mrs R.Padmaja,Sk.Shahnoor. N.Nikhila. L.Thanusha	416-419
74	Useableness And Applications Of Blockchain Technology In Cloud Computing Environment - D Venkatesh,M Vijaya Bhaskar. J Raghunath. D Raghava Raju	420-426
75	Weather Prediction - Kotha Tharun Teja.G.Ashok.K.Raviteja.N.Raviteja	427-431
76	Wholesale And Retail Store Management System - Mr K Siva Rama Krishna.Saranya Bala.Y .Triveni.V . Sai Divya	432-435

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Summarized Reviews with Attention Mechanism Using LSTM

Tahfeem[1] , Sirajuddin Md[2] ,Shaik Rafi[3]

[1,3]*Department of Computer Science and Engineering,*[2].

[2]*Department of Information and Technology,*

[1]*P.V.P.Siddhartha Institute of Technology(Autonomous)*

[2]*Kallam Haranath Reddy Engineering College(Autonomous)*

[3]*Narasaraopeta Engineering College(Autonomous),Guntur,A.P.*

[1]*riyahtahfeem26@gmail.com*

[2] *khit.hodit@gmail.com* [3]*shaikrafinrt@gmail.com*

***Abstract*— Summarization plays an important role in the field of machine translation. We use sequential-to-sequential model in MT to summarize the reviews. We use amazon fine food review dataset. To summarize the review we use stacked lstm with Bi-directional encoder and decoder based long short term memory which helps to summarize the reviews in shorter form. We also minimize the error rate with the help of cross entropy. We got comparable results with the state of art when compared with the others fine food reviews dataset.**

***Keywords*— Summarization, Stacked lstm, encoder, decoder and cross entropy.**

I. INTRODUCTION

For improving their internal services reviews plays an important role, all such types of reviews are collected from different aspects in the form of dataset and the paper [3] extracts the sentiments based on the features of the services provided, repeated sentences are avoided, word distribution model has been used along with frequency to find how many times the words are repeated, based on the threshold value it is easy to know how much importance the word can gain for the summary generation for hotel. Based on the review dataset [1] the reviews are classified into different aspects this can be called as topic modelling. Then sentiment analysis is performed on this aspect modelling with the help of word net to identify the sentiments. More tools were used to get sentiments on aspects for the reviews given by the customers on hotels. The aspects for sentiment summarization in [2] uses extractive and abstractive summarization for sentiment classification, salient text were extracted using extractive one and generates its sentences using abstractive, the same procedure were also followed from [1] in [2] and frequencies were calculated for opinions on words and providing ranks for the aspects using ranking based algorithms then ranges was chosen to extract polarity from the reviews and provides summarized sentiment to the user.

Hamza et al in [4] uses NLTK package to summarize the text reviews by the customers for different social network platforms, to extract different reviews Hamza [4] used web spacy tool and performed lemmatization and stemming process to remove unnecessary words. For sentiment analysis text blob library is used to capture the sentiments in sentences and lexicon based approach is used to for pre-defined sentiments and scores are analysed to get review summarization. And dynamic feature extraction was also considers for the sentiment review generation by [5] reviews are extracted in every hour using web scrapy tool and features are extracted and two phases are applied on features namely pos tagging in that nlp parser is used and most unused nouns are used to eliminate which are of not important using domain specific feature method extraction to perform this association mining and probabilistic methods are used. Opinion lexicon method is used to identify the polarity and extracts only important information which shows the adjective of the sentence so as to find polarity of the sentence and frequency calculation is done on adjectives and more important weights for adjectives will get higher priority and opinion will be summarized and the summarization will be updated every hour dynamically.

Our work will differ in the output and no such work has been done early instead of extracting and suggesting only reviews and summarizing to the user, but our summarization is a model of abstractive summarizing the food reviews and we also extract the subject on which the user was discussing in the sentence sentiment of that review. We fuse the sentiment review with the subject of the sentiment.

II. RELATED WORK

Sentiment analysed summarization is a recent trend in the research area. Many researchers have published articles related to the sentiment analysis on online products, hotels and food. Sentiment analysis summarization can be done on three levels 1. Record level 2. sentence level 3. Word level. Different authors has expressed their views in different ways some of them were analysed as follows

This paper was mainly influenced from [1] but we are collecting all the reviews which are given only on the food item data set but this paper considers all the items of hotel like service, food etc. if one customer has given negative review on only one item without considering all other items and no one has given review about that particular product then the polarity about only that item will be shown as negative and highlights only that negative polarity as overall performance to the user. So our paper is a modification of [1] instead of collecting and giving importance to all of them in the hotel. We would like to highlight only the food items.

The work from [2] was differentiating the reviews based on the aspects which were given by customers, then it collects all the reviews and performs summation process to find frequency based on that aspect and also identifies the aspect that is interesting or not and then again finding the degree of polarity for summarization based on degree value of 7 which feels to be time taken process and the outlier detection is also not so good if the value is average then it may consider that aspect or may not consider but this paper eliminates that aspect based summarization for sentiments we replace by adding sentiment summarization with subject of that review in final output generation so that the customer understand more precisely.

The most inevitable task from [3] has done consistency work in summarizing the reviews of hotel but only useful information is extracting so there may be a meaning loss or may be semantic loss from the sentence or from the entire document, but we need to give the accurate information to the user so that by reading the summarization he has to decide whether he can go with that food item or not..

Hamza et al in [4] extracted the reviews by using scrapy tool by considering only certain columns for summarization then

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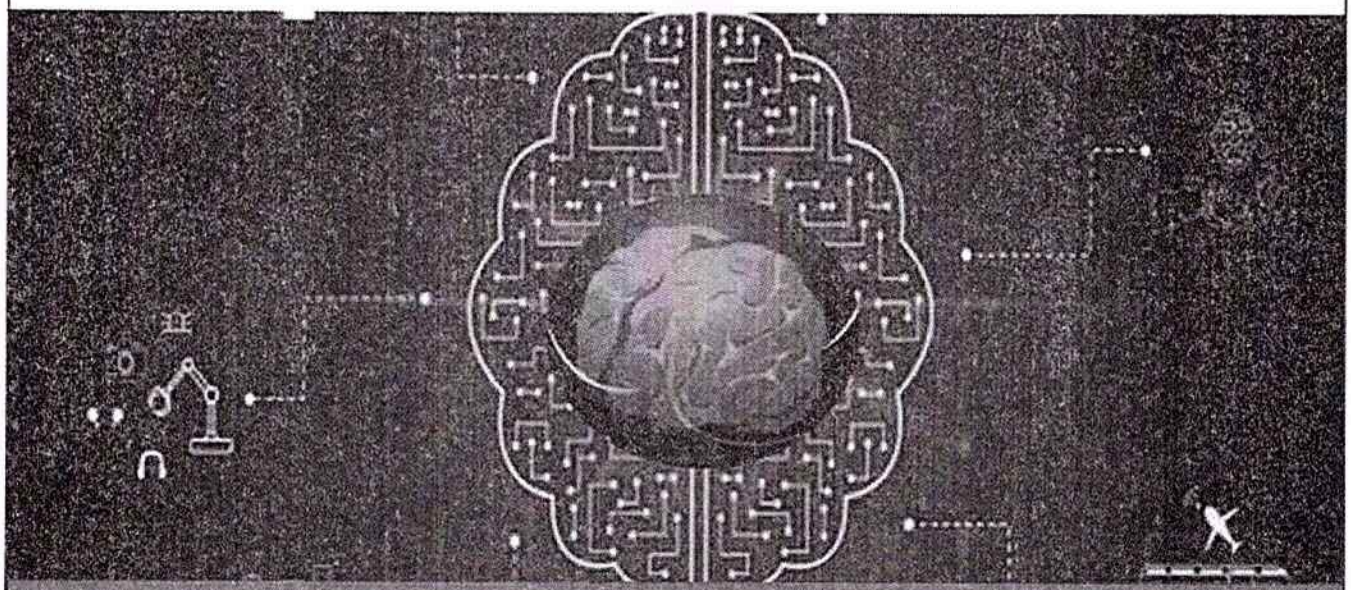

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-

REF. NO	TITLE OF THE PAPER AND AUTHOR(S)	Page No.
	Artificial Intelligence and Its Emerging Areas -NEC-ICAIIA 2K21	
1.	A Data Mining Based Model For Detection Of Deceitful Behaviour In Water Consumption - Tejasri Choudi,B.V.Satish, V.Naga Jyothi, K.Navya	1-5
2	A Machine Learning Framework For Prediction Of Heart Disease, Ramasetty Ramu,Kota Jagadeesh,Chanti Rajamohan Reddy,V. Mahesh Babu	6-10
3	A Supervised Learning Algorithm For Credit Card Fraud Detection, - Guggilam Sai Sri, Gummadilli Gouthami, Potluri Srividya, M. Mamatha	11-15
4	Amazon Product Review Sentiment Analysis Using Machine Learning - Ms Mohammad Arsha Sultana,P. Rakesh, M. Sandeep, G. Jagadeesh	16-20
5	An Interactive Study Of Thyroid Disease Prediction Using Machine Learning - D. Lokesh Gupta, D.Lokesh Gupta, K.V.Narasimha Reddy, D.Ramesh, V.Veerendra	21-25
6	Autoregressive Integrated Moving Average Model For Prediction Of Crypto Currency, - Pokuri Jaya Venkata Naga Sudhakar,Alladi Anil,Avula Venkata Rami Reddy,V. Mahesh Babu	26--29
7	Biometric Identification Scheme With Efficient Privacy-Preserving Mechanism For Cloud Computing Service, - Shaik Ruksana,Bandaru Naga Siva Saisuryatejaswi,Yadavalli Yedukondalu,M Mamatha	30-34
8	Bitcoin Price Prediction -Mrs R.Padmaja,K.V.D Hanisha, B Amulya, M Harika	35-38
9	Calories Burned Prediction, - Niharika Motupalli, B.Siva Kanaka Raju Shaik Mehataj , U. Jhansi Rani, T .Bhavani	39-45
10	Cartoonize Image Using Deep Learning - Gouse Mastan Vali,D.Vamsi Krishna, A.Sairam,K.S.Lakshmi Narayana	46-54
11	Children Speech Recognition Using Machine Learning Methodologies - Dr.T.V.Sai Krishna, R Venkat	55-60

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Principal
NARASARAOPETA ENGINEERING COLLEGE
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Guntur (Dist.), A.P.

12	Clarification Of Webbing Through Cloud Computing Technologies - Amara.S.A.L.G.Gopala Gupta.Dr. Gudapati Syam Prasad	61-65
13	Convolutional Lstm Model For Sentiment Analysis On Social Big Data - Raghuveer Pachipulusu.V.Ananth Reddy. R.Sai Kiran. T.Vignesh	66-72
14	Data Preprocessing For Efficient Prediction In Customer Relationship Management. - Patur Ganga. K.Arun	73-78
15	Design And Experimental Study Of Automatic Colour Sorting By A Robotic Arm System - T.Lakshmibai	79-82
16	Detection Of Autism Disorder Based On Eeg Signal Using Deep Learning Methods -Ranjani M.P.Supraja	83-87
17	Detection Of Online Public Shaming With Offensive Content On Twitter. - Gutta Sai Durga.Gopu Sandhya.Jonnalagadda Madhavi. Dr. S.V.N.Srinivasu	88-91
18	Detection Of Phishing Attacks Using Natural Language Processing And Logistic Regression Model. - Surubula Thirupathi Rao.Pothukuchi Mahesh Babu.Rayala Venu.V. Mahesh Babu	92-98
19	Detection Of Social Network Mental Disorders Through Mining Of Online Social Media. - Battula Venkata Ananta Mehar Gopi.Rajarapu Venu Babu.Maddineni Naveen .Dr. S.V.N.Srinivasu	99-103
20	predections in healthy population through machine learning	104-108
21	Diabetics Prediction using Machine Learning Techniques. - Pathan Sajida. S.Amulya . V.Nandhini	109-114
22	DL-CNN Framework For Malicious Social Bots Detection. - Syed Fathima,Ponnapati Mallika.Gandru Akhilendra Chowdary.M. Mamatha	115-120
23	Door Security System Using Face Recognition -Dr A Srinivasa Rao.K.G.J.Prasanth. M. Rama Rao	121-123
24	ECG Classification With Convolutional Neural Networks - S V N Sreenivasu.T Bhargavika,B Anusha .P Jayasri	124-129
25	Emotion Recognition From Multimodal Data(Speech. Video. Text) Based On Deep Learning Techniques D.P.Supraja	130-137

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NARASARAOPETA ENGINEERING COLLEGE
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NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

26	Estimation Of Population Analysis - Tarun.G.Tarun.T.Purnavamsi.K.Vivekreddy	138-142
27	Eye Ball Cursor Movement Using Opencv - B.Preethi.D.Bharadwaja.B.Preethi. K.Charithra Lavanya.N.Sony	143-147
28	Face.Age And Gender Recogntion System Based on Deep Neural Networks - Gudapati Syam Prasad.K.Narendra Babu.N.Hemanth Kumar.K.Sriniivas	148-154
29	Facial Expression Recognition With Convolutional Neural Networks - S. Siva Nageswara Rao.S.Ramya. T.Anantha Lavanya	155-162
30	Fake Currency Detection. - Mr.Sk.K.M.Basha , Yalagala Hema Latha. Gatakala Venkata Sravya Bhavani. Macharla Maitili	163-167
31	Fake News Detection - Gangasani Likitha. I. Navya Sri. D. Swetha	168-175
32	Fake News Detection Using Machine Learning - Srikanth Mylapalli.Mylapalli Ramesh	176-180
33	Forest Fires Detection Using Machine Learning Algorithms - N.S.Sesi Kiran.P. Lakshmi Narayana. Sk. Mastanvali. P. Nivas	181-185
34	Functioning Of Artificial Intelligence In An Self-Driving Vehicle - A Review -Penugonda Surya Teja.None	186-189
35	Generic Recommendation Engine Using Hybrid Filtering Model - G Prabhakara Reddy.O Ramesh. Ch Anil	190-200
36	Head Motion Detection - Dr A Srinivasa Rao.M.Prathyusha. Y.Rajeswari	201-203
37	Heart Disease Prediction Using Machine Learning - Jhansi Lakshmi Manukonda .R. V. P. S. Rekha. T. Divya. G. L. N. Jayaprada	204-208
38	House Price Prediction - Bodlapati Sowmya Reddy.M. Yamini Priya. P. Manasa	209-213
39	Image Captioning Using Deep Learning - Y E V Pratap Kumar Kuchi.M.Sireesha. G. Sai Akhil. K. Hema Sai Mourya Gupta	214-219

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NARASARAOPETA ENGINEERING COLLEGE
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NARASARAOPET

40	Image Classification Using Object Detection With YOLO Algorithm. Shaik Bhadhar Shareef.Putchakayala Ramesh.Angajala Anil.G. Sambasiva Rao	220-223
41	Implementation Of Video Steganography Cryptography System For Iot-Based Cloud Computing Security. - Sanivarapu Sagar Reddy.Mallavarapu Nikhil.Chevala Venkatesh.Dr. S.V.N Srinivasu	224-228
42	Inform Me-Family Gps Locator - Oruganti Ramesh.G Prabhakara Reddy. Ch. Anil	229-233
43	Ipl Score Prediction Using Machine Learning Methods - Rajyalakshmi Dondapati.N.Likitha.M.Anmisha	234-241
44	Liver Disease Prediction Using Machine Learning Methods - Sravana Sandhya Rani Karnati.K. Sravana Sandhya Rani, B.V.Gayithri.K.Vijayalakshmi	242-249
45	Loan Prediction System - Divya Gopavarapu.K.Manasa.A.Akhila.M.Sireesha	250-255
46	Lung Cancer Prediction - Naga Mallika Gude.M. Navya Sri, B. Sukanya	256-263
47	Map Reduced Segmentation Clustering For Big Data Analytics Using Extended K-Mean Clustering Technique - Mvs.Prasad	264-270
48	Mask R-Cnn For Fire Detection - Razeena Begum Shaik.S Yogananda Datta . M S V Manoj	271-276
49	Melanoma Prediction Using Deep Learning - Aishwarya Nallapati.D. Jaya Tejaswini, J. Prashanthi, T. Siri Chandana	277-280
50	Multilevel Hierarchy Based Privacy Preserved Profile Publishing In Cloud Environment. - Esthala Abhishek.Kambhampati Adinarayana.Battula Ramesh.G. Sambasiva Rao	281-286
51	Music Recommendation Application Based On Facial Expressions - Ms Mohammad Arsha Sultana.Abdul Saherabegum, Akhila Umma, Guthula Jayasri Sai Nikitha	287-290
52	Mutual Fund Prediction Using Machine Learning - Shaik Nannu Saidavali.N.Vinay Chandra Pal, K.Bhaskar Reddy	291-295
53	Network Coding Techniques To Store The Data Securely In Cloud. - Guru Brahmam Madala, Vijay Anand R	296-301
54	Network Spam And Fake User Detection In Online Social Networks Using Support Vector Machine. - Majeti Pavan Kalyan.Anchula Sreekanth.Ravi Mahesh Babu.G. Sambasiva Rao	302-307
55	Next Word Prediction Using Recurrent Neural Networks - Srikanth Kolisetty.B. Venkateswarlu, S. Siva Sai Kumar, T. Uday Kumar	308-313

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56	Nobel Methodologies For Immigration Of Service Oriented Architecture Based Applications To Microservice Architecture - M Madhu Sudhan, P Indupriyankaray, Aelluri Lakshmi, M Sreenandan Reddy	314-317
57	Plant Leaf Disease Detection System Using Resnet-50 - Chappa.Ramya Sai.K.Kavya.K.Meghana.A.Tulasi	318-321
58	Predicting The Survival Of Patients With Heart Failure-Machine Learning Methods - Hemalatha Tatiparthi.G.Mounika.K.Prasanthi.G.Hemavani	322-329
59	Prediction Of Agriculture Yields Using Machine Learning Algorithms. - Katepalli Sai Sravanthi.Grandhisila Venkatanagalakshmipravallika.Kollipara Harika .M. Mamatha	330-335
60	Prediction Of Covid 19 Epidemics Using Data Analytics - S.Anil Kumar.G.Sathar	336-343
61	Prediction Of Covid Readmissions Using Machine Learning - Athukuri Lakshmi Narendra Kumar.B.V.V.N.Sai Kumar	344-347
62	Rainfall Prediction Using Machine Learning - Anusha Bhavanam,Ch. Vyshnavi, Ch.Priyanka	348-353
63	Review On Load Balancing Using Cloud Computing - J Raghunath .A Chandra Sekhar, Shaik Razia, D Venkatesh	354-362
64	Road Safety And Vehicle Accident Prevention - G.Gayatri.G.Gayatri.K.Sugunitha	363-367
65	Sensile Soil Analyzing Application - Mathi Raasi.G.Santhi Sri.M Sravya.Shaik Khaja Mohiddin Basha	368-373
66	Sentiment Analysis Of Movie Reviews Using Ml -Mukunda Gagula.Lakshma Reddy.Sai Venkatesh.Shaik Rafi	374-377
67	Supevised Learning Models for perception of Multi-Trafic Scene	378-383
68	Smart Parking System Using Web Application, - K Razeena Begum, S Anand, K Vivek, K Manideep	384-387

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CLARIFICATION OF WEBBING THROUGH CLOUD COMPUTING TECHNOLOGIES

Amara S A L G Gopala Gupta [1], Dr. Gudapati Syam Prasad [2]
1* Department of Computer Science and Engineering,
Koneru Lakshmaiah Education Foundation, Vaddeswaram
Guntur 522502, Andhra Pradesh, India
2* Professor, Department of Computer Science and Engineering,
Narasaraopeta Engineerig College, Narasaraopet.

ABSTRACT

In this paper we present the web mining using Cloud Computing Technology. Web mining include how to extort the functional in order from the web and expand knowledge using data mining technique. So many assets and technique are existing i.e. web content mining, web usage mining and right to use through the web servers. Web mining techniques and application are much crucial in cloud computing. The implementation of these techniques through cloud computing will allow users to recover appropriate and consequential data from virtually incorporated data warehouse which reduce the cost and infrastructure.

INTRODUCTION

Web Mining is type of data mining which is used for web. Web Mining has become an emerging and an important trend because of the main reason that today storage of data has become enormous that retrieving and processing them has become an overhead. Two different paths were taken in primarily for defining Web mining they were 'process-middle view' and 'data-middle view. Process middle assumed the sequence of tasks whereas data middle accounted for the types of web data that was being used in the mining process. The second access is taken into examination widely in recent times. Web Mining has been categorized into three major distinct categories: Web Content Mining, Web Usage Mining and Web Structure Mining. The performance of these categorises on World Wide Web have been well analyzed. But usage of these on the CC is newly clubbed technology

ABOUT WEB DATA MINING

Web data mining can be classified into three. They are Web content mining, Web structure mining and Web usage mining.

a) Web Content Mining

b) Web Structure Mining

c) Web Usage Mining

i . Web Content Mining :

Web Mining is mostly extract the information on the web. Which process is appear to access the information on the web. It is web content mining. Many pages are open to approach the information on the web. These pages are content of web. Searching the information and open search pages is also content of web. Last exact result is defined the analyzed pages content mining..

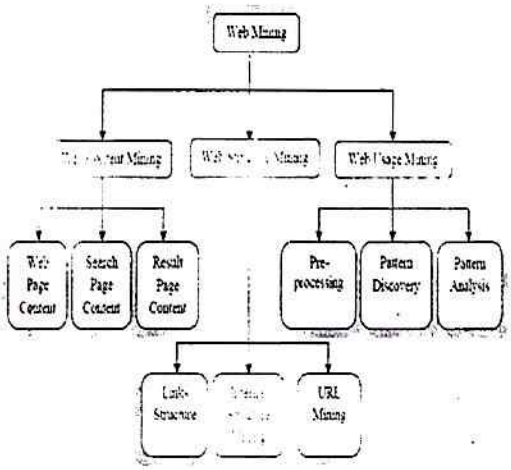

Fig 1.Classification of Web Mining

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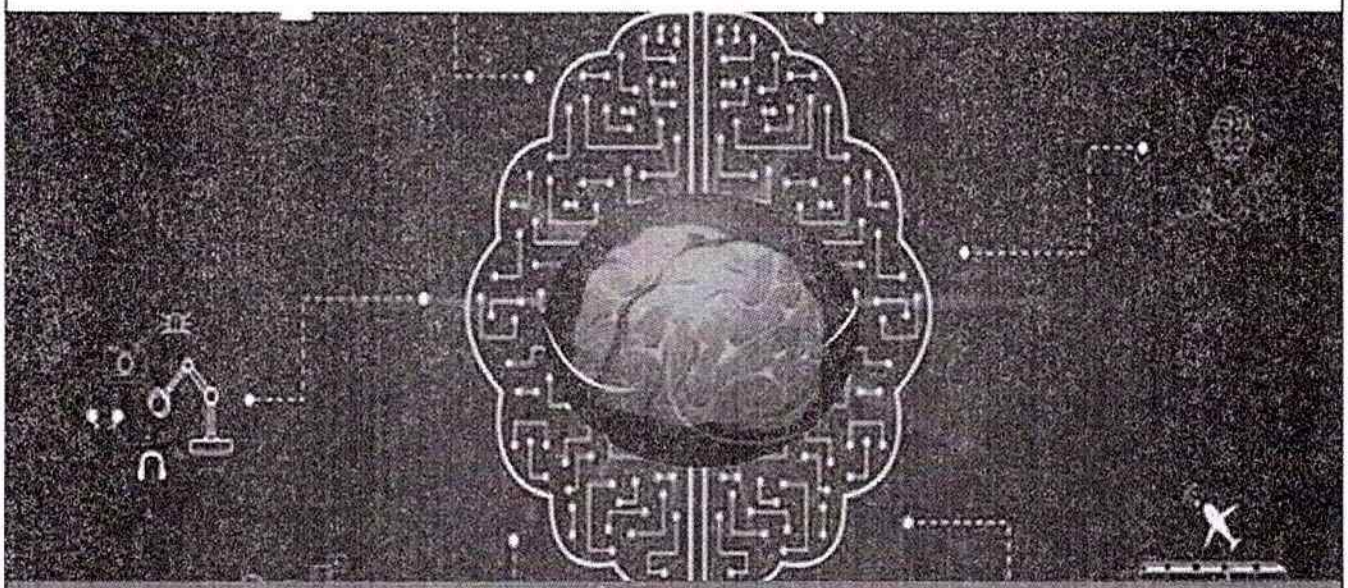

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REF. NO	TITLE OF THE PAPER AND AUTHOR(S)	Page No.
	Artificial Intelligence and Its Emerging Areas -NEC-ICAIIA 2K21	
1.	A Data Mining Based Model For Detection Of Deceitful Behaviour In Water Consumption - Tejasri Choudi,B.V.Satish, V.Naga Jyothi, K.Navya	1-5
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6	Autoregressive Integrated Moving Average Model For Prediction Of Crypto Currency. - Pokuri Jaya Venkata Naga Sudhakar,Alladi Anil,Avula Venkata Rami Reddy,V. Mahesh Babu	26--29
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8	Bitcoin Price Prediction -Mrs R.Padmaja,K.V.D Hanisha, B Amulya, M Harika	35-38
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10	Cartoonize Image Using Deep Learning - Gouse Mastan Vali,D.Vamsi Krishna, A.Sairam,K.S.Lakshmi Narayana	46-54
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15	Design And Experimental Study Of Automatic Colour Sorting By A Robotic Arm System - T.Lakshmibai	79-82
16	Detection Of Autism Disorder Based On Eeg Signal Using Deep Learning Methods -Ranjani M.P.Supraja	83-87
17	Detection Of Online Public Shaming With Offensive Content On Twitter. - Gutta Sai Durga.Gopu Sandhya.Jonnalagadda Madhavi. Dr. S.V.N.Srinivasu	88-91
18	Detection Of Phishing Attacks Using Natural Language Processing And Logistic Regression Model. - Surubula Thirupathi Rao.Pothukuchi Mahesh Babu.Rayala Venu.V. Mahesh Babu	92-98
19	Detection Of Social Network Mental Disorders Through Mining Of Online Social Media. - Battula Venkata Ananta Mehar Gopi.Rajarapu Venu Babu.Maddineni Naveen ,Dr. S.V.N.Srinivasu	99-103
20	predections in healthy population through machine learning	104-108
21	Diabetics Prediction using Machine Learning Techniques. - Pathan Sajida. S.Amulya , V.Nandhini	109-114
22	DL-CNN Framework For Malicious Social Bots Detection. - Syed Fathima.Ponnapati Mallika.Gandru Akhilendra Chowdary.M. Mamatha	115-120
23	Door Security System Using Face Recognition -Dr A Srinivasa Rao.K.G.J.Prasanth. M. Rama Rao	121-123
24	ECG Classification With Convolutional Neural Networks - S V N Sreenivasu.T Bhargavika,B Anusha ,P Jayasri	124-129
25	Emotion Recognition From Multimodal Data(Speech. Video. Text) Based On Deep Learning Techniques D.P.Supraja	130-137

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NARASARAOPET - 522 601.
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26	Estimation Of Population Analysis - Tarun.G.Tarun.T.Purnavamsi.K.Vivekreddy	138-142
27	Eye Ball Cursor Movement Using Opencv - B.Preethi.D.Bharadwaja.B.Preethi. K.Charithra Lavanya.N.Sony	143-147
28	Face.Age And Gender Recogntion System Based on Deep Neural Networks - Gudapati Syam Prasad.K.Narendra Babu.N.Hemanth Kumar.K.Sriniivas	148-154
29	Facial Expression Recognition With Convolutional Neural Networks - S. Siva Nageswara Rao.S.Ramya. T.Anantha Lavanya	155-162
30	Fake Currency Detection. - Mr.Sk.K.M.Basha , Yalagala Hema Latha. Gatakala Venkata Sravya Bhavani. Macharla Maitili	163-167
31	Fake News Detection - Gangasani Likitha. I. Navya Sri. D. Swetha	168-175
32	Fake News Detection Using Machine Learning - Srikanth Mylapalli.Mylapalli Ramesh	176-180
33	Forest Fires Detection Using Machine Learning Algorithms - N.S.Sesi Kiran.P. Lakshmi Narayana. Sk. Mastanvali. P. Nivas	181-185
34	Functioning Of Artificial Intelligence In An Self-Driving Vehicle - A Review -Penugonda Surya Teja.None	186-189
35	Generic Recommendation Engine Using Hybrid Filtering Model - G Prabhakara Reddy.O Ramesh. Ch Anil	190-200
36	Head Motion Detection - Dr A Srinivasa Rao.M.Prathyusha. Y.Rajeswari	201-203
37	Heart Disease Prediction Using Machine Learning - Jhansi Lakshmi Manukonda .R. V. P. S. Rekha. T. Divya. G. L. N. Jayaprada	204-208
38	House Price Prediction - Bodlapati Sowmya Reddy.M. Yamini Priya. P. Manasa	209-213
39	Image Captioning Using Deep Learning - Y E V Pratap Kumar Kuchi.M.Sireesha. G. Sai Akhil. K. Hema Sai Mourya Gupta	214-219

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Guntur (Dist.), A.P.

40	Image Classification Using Object Detection With YOLO Algorithm. Shaik Bhadhar Shareef.Putchakayala Ramesh.Angajala Anil.G. Sambasiva Rao	220-223
41	Implementation Of Video Steganography Cryptography System For Iot-Based Cloud Computing Security. - Sanivarapu Sagar Reddy.Mallavarapu Nikhil.Chevala Venkatesh.Dr. S.V.N.Srinivasu	224-228
42	Inform Me-Family Gps Locator - Oruganti Ramesh.G Prabhakara Reddy. Ch. Anil	229-233
43	Ipl Score Prediction Using Machine Learning Methods - Rajyalakshmi Dondapati.N.Likitha.M.Anmisha	234-241
44	Liver Disease Prediction Using Machine Learning Methods - Sravana Sandhya Rani Karnati.K. Sravana Sandhya Rani, B.V.Gayithri.K.Vijayalakshmi	242-249
45	Loan Prediction System - Divya Gopavarapu.K.Manasa.A.Akhila.M.Sireesha	250-255
46	Lung Cancer Prediction - Naga Mallika Gude.M. Navya Sri. B. Sukanya	256-263
47	Map Reduced Segmentation Clustering For Big Data Analytics Using Extended K-Mean Clustering Technique - Mvs.Prasad	264-270
48	Mask R-Cnn For Fire Detection - Razeena Begum Shaik.S Yogananda Datta . M S V Manoj	271-276
49	Melanoma Prediction Using Deep Learning - Aishwarya Nallapati.D. Jaya Tejaswini. J. Prashanthi. T. Siri Chandana	277-280
50	Multilevel Hierarchy Based Privacy Preserved Profile Publishing In Cloud Environment. - Esthala Abhishek.Kambhampati Adinarayana.Battula Ramesh.G. Sambasiva Rao	281-286
51	Music Recommendation Application Based On Facial Expressions - Ms Mohammad Arsha Sultana.Abdul Saherabegum. Akhila Umma. Guthula Jayasri Sai Nikitha	287-290
52	Mutual Fund Prediction Using Machine Learning - Shaik Nannu Saidavali.N.Vinay Chandra Pal. K.Bhaskar Reddy	291-295
53	Network Coding Techniques To Store The Data Securely In Cloud. - Guru Brahmam Madala. Vijay Anand R	296-301
54	Network Spam And Fake User Detection In Online Social Networks Using Support Vector Machine. - Majeti Pavan Kalyan.Anchula Sreekanth.Ravi Mahesh Babu.G. Sambasiva Rao	302-307
55	Next Word Prediction Using Recurrent Neural Networks - Srikanth Kolisetty.B. Venkateswarlu. S.Siva Sai Kumar. T. Uday Kumar	308-313

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57	Plant Leaf Disease Detection System Using Resnet-50 - Chappa.Ramya Sai,K.Kavya,K.Meghana,A.Tulasi	318-321
58	Predicting The Survival Of Patients With Heart Failure-Machine Learning Methods - Hemalatha Tatiparthi,G.Mounika,K.Prasanthi,G.Hemavani	322-329
59	Prediction Of Agriculture Yields Using Machine Learning Algorithms. - Katepalli Sai Sravanthi,Grandhisila Venkatanagalakshmipravallika,Kollipara Harika ,M. Mamatha	330-335
60	Prediction Of Covid 19 Epidemics Using Data Analytics - S.Anil Kumar,G.Sathar	336-343
61	Prediction Of Covid Readmissions Using Machine Learning - Athukuri Lakshmi Narendra Kumar,B.V.V.N.Sai Kumar	344-347
62	Rainfall Prediction Using Machine Learning - Anusha Bhavanam,Ch. Vyshnavi, Ch.Priyanka	348-353
63	Review On Load Balancing Using Cloud Computing - J Raghunath ,A Chandra Sekhar, Shaik Razia, D Venkatesh	354-362
64	Road Safety And Vehicle Accident Prevention - G.Gayatri,G.Gayatri,K.Sugunitha	363-367
65	Sensile Soil Analyzing Application - Mathi Raasi,G.Santhi Sri,M Sravya,Shaik Khaja Mohiddin Basha	368-373
66	Sentiment Analysis Of Movie Reviews Using Ml -Mukunda Gagula,Lakshma Reddy,Sai Venkatesh,Shaik Rafi	374-377
67	Supevised Learning Models for perception of Multi-Trafic Scene	378-383
68	Smart Parking System Using Web Application, - K Razeena Begum, S Anand, K Vivek, K Manideep	384-387

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69	Social Distance Monitoring Using Deep Learning - Satuluri Vijaya Lakshmi.K.K.N. Bhuvaneswari, B.Vijaya Lakshmi	388-398
70	Stock Value Prediction Using Regression - B.Jhansi Vazram, G.Venkatrao, D.Srtinivasa Reddy, V.Ashok Kumar	399-404
71	Summarized Reviews With Attention Mechanism Using Lstm - Tahfeem Shaik,Sirajuddin,Shaikrafi	405-408
72	Supervised Learning For Fraud And Malware Detection From Android Applications. - Tunuguntla Bala Bhaskar Rao ,Dronadula Narendra, Maddu Phanindra Kumar,Dr. S.V.N.Srinivasu	409-415
73	Trust-Based Privacy Preserving Photo Sharing In Online Social Networks - Mrs R.Padmaja,Sk.Shahnoor, N.Nikhila, L.Thanusha	416-419
74	Useableness And Applications Of Blockchain Technology In Cloud Computing Environment - D Venkatesh,M Vijaya Bhaskar, J Raghunath, D Raghava Raju	420-426
75	Weather Prediction - Kotha Tharun Teja,G.Ashok,K.Raviteja,N.Raviteja	427-431
76	Wholesale And Retail Store Management System - Mr K Siva Rama Krishna,Saranya Bala.Y ,Triveni.V , Sai Divya	432-435

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SOCIAL DISTANCING MONITORING USING DEEP LEARNING

S. Vijaya Lakshmi[1], K.V.NarasimhaReddy[2], K.K.N. Bhuvaneswari[2], B. Vijaya Lakshmi[3]

[1]Student, Narasaraopeta Engineering College, Narasaraopet, India,s.vijaya20000@gmail.com

[2]Assistant Professor, Narasaraopeta Engineering College, Narasaraopet, India,narsimhareddynec03@gmail.com

[2]Student, Narasaraopeta Engineering College, Narasaraopet, India,bhuvaneswari6884@gmail.com

[3]Student, Narasaraopeta Engineering College, Narasaraopet, India,vijayalakshmi6518@gmail.com

ABSTRACT

Social distancing has become a mantra around the world, transcending languages and cultures. This way of livinghas been forced upon us by the fastest growing pandemic the World has ever seen – COVID-19. As per the World Health Organization (WHO), COVID-19 has so far infected almost 4 million people and claimed over 230K lives globally. Around 213 countries have been affected so far by the deadly virus.

The biggest cause of concern is that COVID-19 spreads from person to person through contact or if you're within close proximity of an infected person. Given how densely populated some areas are, this has been quite a challenge.]The only way to prevent the spread of COVID-19 is Social Distancing. Keeping a safe distance from each other is the ultimate way to prevent the spread of this disease (at least until a vaccine is found).

So, this got me thinking – I want to build a tool that can potentially detect where each person is in real-time, and return a bounding box that turns red if the distance between two people is dangerously close.

This can be used by governments to Analyze the movement of people and alert them if the situation turns serious.

The paper presents a methodology for social distancing detection using Deep Learning to evaluate the distance between people to mitigate the impact of this Coronavirus pandemic.

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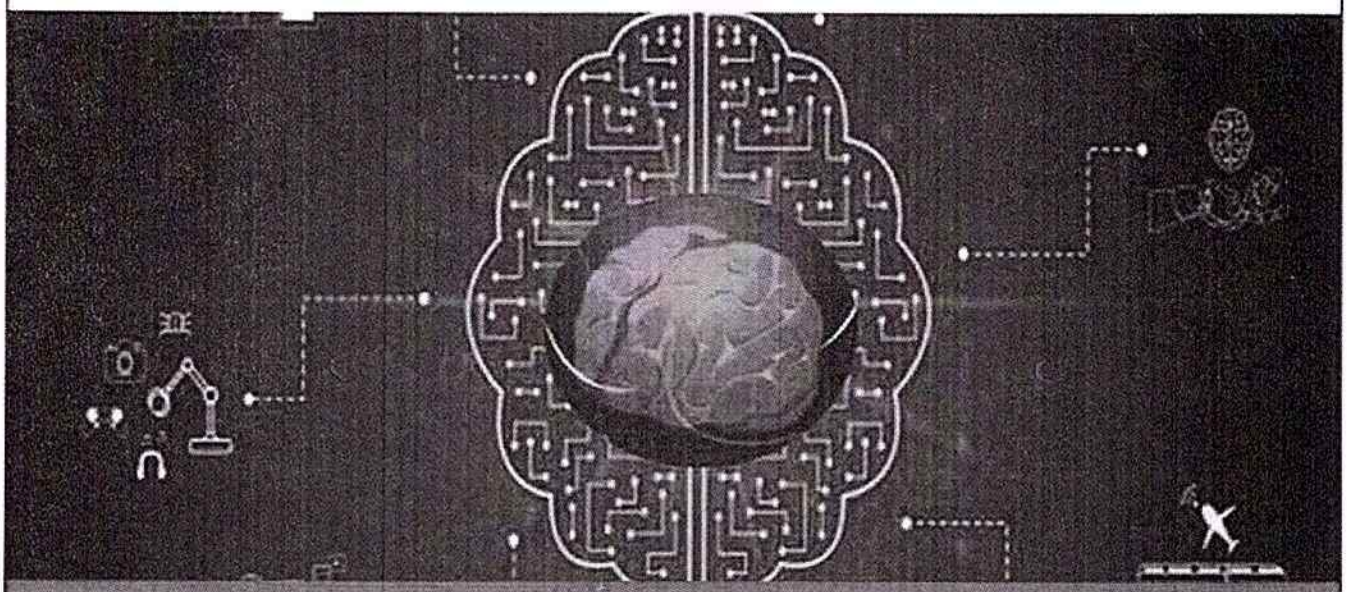

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	Artificial Intelligence and Its Emerging Areas -NEC-ICAIIA 2K21	
1.	A Data Mining Based Model For Detection Of Deceitful Behaviour In Water Consumption - Tejasri Choudi,B.V.Satish, V.Naga Jyothi, K.Navya	1-5
2	A Machine Learning Framework For Prediction Of Heart Disease. Ramasetty Ramu,Kota Jagadeesh,Chanti Rajamohan Reddy,V. Mahesh Babu	6-10
3	A Supervised Learning Algorithm For Credit Card Fraud Detection. - Guggilam Sai Sri, Gummadilli Gouthami, Potluri Srividya, M. Mamatha	11-15
4	Amazon Product Review Sentiment Analysis Using Machine Learning - Ms Mohammad Arsha Sultana,P. Rakesh, M. Sandeep, G. Jagadeesh	16-20
5	An Interactive Study Of Thyroid Disease Prediction Using Machine Learning - D. Lokesh Gupta, D.Lokesh Gupta, K.V.Narasimha Reddy, D.Ramesh, V.Veerendra	21-25
6	Autoregressive Integrated Moving Average Model For Prediction Of Crypto Currency. - Pokuri Jaya Venkata Naga Sudhakar,Alladi Anil,Avula Venkata Rami Reddy,V. Mahesh Babu	26--29
7	Biometric Identification Scheme With Efficient Privacy-Preserving Mechanism For Cloud Computing Service. - Shaik Ruksana,Bandaru Naga Siva Saisuryatejaswi,Yadavalli Yedukondalu,M. Mamatha	30-34
8	Bitcoin Price Prediction -Mrs R.Padmaja,K.V.D Hanisha, B Amulya, M Harika	35-38
9	Calories Burned Prediction. - Niharika Motupalli, B.Siva Kanaka Raju Shaik Mehataj , U. Jhansi Rani, T .Bhavani	39-45
10	Cartoonize Image Using Deep Learning - Gouse Mastan Vali,D.Vamsi Krishna, A.Sairam,K.S.Lakshmi Narayana	46-54
11	Children Speech Recognition Using Machine Learning Methodologies - Dr.T.V.Sai Krishna, R Venkat	55-60

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NARASARAOPETA ENGINEERING COLLEGE
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Guntur (Dist.), A.P.

12	Clarification Of Webbing Through Cloud Computing Technologies - Amara.S.A.L.G.Gopala Gupta.Dr. Gudapati Syam Prasad	61-65
13	Convolutional Lstm Model For Sentiment Analysis On Social Big Data - Raghuveer Pachipulusu.V.Ananth Reddy. R.Sai Kiran. T.Vignesh	66-72
14	Data Preprocessing For Efficient Prediction In Customer Relationship Management. - Patur Ganga. K.Arun	73-78
15	Design And Experimental Study Of Automatic Colour Sorting By A Robotic Arm System - T.Lakshmibai	79-82
16	Detection Of Autism Disorder Based On Eeg Signal Using Deep Learning Methods -Ranjani M.P.Supraja	83-87
17	Detection Of Online Public Shaming With Offensive Content On Twitter. - Gutta Sai Durga.Gopu Sandhya.Jonnalagadda Madhavi. Dr. S.V.N.Srinivasu	88-91
18	Detection Of Phishing Attacks Using Natural Language Processing And Logistic Regression Model. - Surubula Thirupathi Rao.Pothukuchi Mahesh Babu.Rayala Venu.V. Mahesh Babu	92-98
19	Detection Of Social Network Mental Disorders Through Mining Of Online Social Media. - Battula Venkata Ananta Mehar Gopi.Rajarapu Venu Babu.Maddineni Naveen .Dr. S.V.N.Srinivasu	99-103
20	predections in healthy population through machine learning	104-108
21	Diabetics Prediction using Machine Learning Techniques. - Pathan Sajida. S.Amulya , V.Nandhini	109-114
22	DL-CNN Framework For Malicious Social Bots Detection. - Syed Fathima.Ponnapati Mallika.Gandru Akhilendra Chowdary.M. Mamatha	115-120
23	Door Security System Using Face Recognition -Dr A Srinivasa Rao.K.G.J.Prasanth. M. Rama Rao	121-123
24	ECG Classification With Convolutional Neural Networks - S V N Sreenivasu.T Bhargavika.B Anusha .P Jayasri	124-129
25	Emotion Recognition From Multimodal Data(Speech. Video. Text) Based On Deep Learning Techniques D.P.Supraja	130-137

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26	Estimation Of Population Analysis - Tarun.G.Tarun.T.Purnavamsi.K.Vivekreddy	138-142
27	Eye Ball Cursor Movement Using Opencv - B.Preethi.D.Bharadwaja.B.Preethi. K.Charithra Lavanya.N.Sony	143-147
28	Face.Age And Gender Recogntion System Based on Deep Neural Networks - Gudapati Syam Prasad.K.Narendra Babu.N.Hemanth Kumar.K.Sriniivas	148-154
29	Facial Expression Recognition With Convolutional Neural Networks - S. Siva Nageswara Rao.S.Ramya. T.Anantha Lavanya	155-162
30	Fake Currency Detection. - Mr.Sk.K.M.Basha , Yalagala Hema Latha. Gatakala Venkata Sravya Bhavani. Macharla Maitili	163-167
31	Fake News Detection - Gangasani Likitha. I. Navya Sri. D. Swetha	168-175
32	Fake News Detection Using Machine Learning - Srikanth Mylapalli.Mylapalli Ramesh	176-180
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35	Generic Recommendation Engine Using Hybrid Filtering Model - G Prabhakara Reddy.O Ramesh. Ch Anil	190-200
36	Head Motion Detection - Dr A Srinivasa Rao.M.Prathyusha. Y.Rajeswari	201-203
37	Heart Disease Prediction Using Machine Learning - Jhansi Lakshmi Manukonda .R. V. P. S. Rekha. T. Divya. G. L. N. Jayaprada	204-208
38	House Price Prediction - Bodlapati Sowmya Reddy.M. Yamini Priya. P. Manasa	209-213
39	Image Captioning Using Deep Learning - Y E V Pratap Kumar Kuchi.M.Sireesha. G. Sai Akhil. K. Hema Sai Mourya Gupta	214-219

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40	Image Classification Using Object Detection With YOLO Algorithm. Shaik Bhadhar Shareef.Putchakayala Ramesh.Angajala Anil.G. Sambasiva Rao	220-223
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45	Loan Prediction System - Divya Gopavarapu.K.Manasa.A.Akhila.M.Sireesha	250-255
46	Lung Cancer Prediction - Naga Mallika Gude.M. Navya Sri. B. Sukanya	256-263
47	Map Reduced Segmentation Clustering For Big Data Analytics Using Extended K-Mean Clustering Technique - Mvs.Prasad	264-270
48	Mask R-Cnn For Fire Detection - Razeena Begum Shaik.S Yogananda Datta , M S V Manoj	271-276
49	Melanoma Prediction Using Deep Learning - Aishwarya Nallapati.D. Jaya Tejaswini. J. Prashanthi. T. Siri Chandana	277-280
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52	Mutual Fund Prediction Using Machine Learning - Shaik Nannu Saidavali.N.Vinay Chandra Pal, K.Bhaskar Reddy	291-295
53	Network Coding Techniques To Store The Data Securely In Cloud. - Guru Brahmam Madala, Vijay Anand R	296-301
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55	Next Word Prediction Using Recurrent Neural Networks - Srikanth Kolisetty.B. Venkateswarlu, S. Siva Sai Kumar, T. Uday Kumar	308-313

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57	Plant Leaf Disease Detection System Using Resnet-50 - Chappa.Ramya Sai,K.Kavya,K.Meghana,A.Tulasi	318-321
58	Predicting The Survival Of Patients With Heart Failure-Machine Learning Methods - Hemalatha Tatiparthi,G.Mounika,K.Prasanthi,G.Hemavani	322-329
59	Prediction Of Agriculture Yields Using Machine Learning Algorithms. - Katepalli Sai Sravanthi,Grandhisila Venkatanagalakshmipravallika,Kollipara Harika ,M. Mamatha	330-335
60	Prediction Of Covid 19 Epidemics Using Data Analytics - S.Anil Kumar,G.Sathar	336-343
61	Prediction Of Covid Readmissions Using Machine Learning - Athukuri Lakshmi Narendra Kumar,B.V.V.N.Sai Kumar	344-347
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63	Review On Load Balancing Using Cloud Computing - J Raghunath ,A Chandra Sekhar, Shaik Razia, D Venkatesh	354-362
64	Road Safety And Vehicle Accident Prevention - G.Gayatri,G.Gayatri,K.Sugunitha	363-367
65	Sensile Soil Analyzing Application - Mathi Raasi,G.Santhi Sri,M Sravya,Shaik Khaja Mohiddin Basha	368-373
66	Sentiment Analysis Of Movie Reviews Using Ml -Mukunda Gagula,Lakshma Reddy,Sai Venkatesh,Shaik Rafi	374-377
67	Supevised Learning Models for perception of Multi-Trafic Scene	378-383
68	Smart Parking System Using Web Application, - K Razeena Begum, S Anand, K Vivek, K Manideep	384-387

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73	Trust-Based Privacy Preserving Photo Sharing In Online Social Networks - Mrs R.Padmaja,Sk.Shahnoor, N.Nikhila, L.Thanusha	416-419
74	Useableness And Applications Of Blockchain Technology In Cloud Computing Environment - D Venkatesh,M Vijaya Bhaskar, J Raghunath, D Raghava Raju	420-426
75	Weather Prediction - Kotha Tharun Teja,G.Ashok,K.Raviteja,N.Raviteja	427-431
76	Wholesale And Retail Store Management System - Mr K Siva Rama Krishna,Saranya Bala.Y ,Triveni.V , Sai Divya	432-435

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Rainfall Prediction using Machine Learning

K. Narasimha reddy[1], Bhavanam Anusha[2], Chavali Vyshnavi[3], Chittabathina Priyanka[4]
Student, Department of CSE, Narasaraopeta Engineering College, Narasaraopet,India,
anushbhavanzm26@gmail.com[1] anushabhavanam26@gmail.com[2],
chavalivyshnavi124@gmail.com[3],
priyachittabathina17@gmail.com[4]

***Abstract*— Rainfall prediction is one of the interesting and important task which has a significant impact on the economy of the country and human society. Forecast of rainfall in advance can help to reduce human and financial loss. Machine learning techniques can use computational methods and predict whether it is going to rain tomorrow or not by retrieving and integrating the hidden knowledge from the linear and non-linear patterns of past weather data. This comparative study is conducted concentrating on three aspects: modeling inputs, modeling methods, and pre-processing techniques. This task provides efficient rainfall prediction methods of machine learning techniques and results show a comparison of various evaluation metrics of these machine learning techniques and their reliability to predict the rainfall by analyzing the weather data.**

Keywords — Rainfall Prediction, Classification, Data Analysis, Decision Tree, Feature Extraction, Machine Learning, Neural Network, Random Forest, Regression.

I. INTRODUCTION

This Rainfall Prediction is an important task that provides crucial information on the conditions ahead. This climatic factor has impact on many human activities like power generations, forestry, tourism and agricultural production. Prediction of rain can also help us saving from adverse natural events such as avalanches, landslides and flooding. These incidents have high impact on society for years. Therefore, having an appropriate approach for rainfall prediction makes it possible to take pre-emptive safety measures for these natural phenomena. An accurate prediction of rainfall has become more difficult than before due to climate variations. To solve this uncertainty, we used various machine learning techniques and models to make accurate and timely predictions. The data set is derived from a weather prediction database. Which composed of many atmospheric parameters. These paper aims to provide end to end machine learning life cycle right from data preprocessing to implementing models to evaluating them. Data preprocessing steps include imputing missing values, feature transformation, encoding categorical features, feature scaling and feature selection. We implemented models such as Logistic Regression, Decision Tree, Random Forest Classifier, Neural Network and LightGBM. For evaluation purpose, we used Accuracy, Precision Recall, F- Score and Area Under Curve as evaluation metrics. For our experiments, we train our classifiers using Australian weather data gathered from various weather stations in Australia.

II. CASE STUDY

In this paper, the data set under consideration contains daily weather observations from numerous Australian Weather stations. The target variable is RainTomorrow which means: Did it rain the next day? Yes or No. The dataset is available at https://kaggle.com/jsphyg/weather-dataset-rattle-package

This data set consists of 23 features and 142k instances. Below are the features.

Data	Description
Date	The date of observation
Location	The common name of the location of the weather station
MinTemp	The minimum temperature in degrees celsius
MaxTemp	The maximum temperature in degrees celsius Rainfall The amount of rainfall recorded for the day in mm
Evaporation	The so-called Class A pan evaporation (mm) in the 24 hours to 9am
Sunshine	The number of hours of bright sunshine in the day.
WindGustDir	The direction of the strongest wind gust in the 24 hours to midnight
WindGustSpeed	The speed (km/h) of the strongest wind gust in the 24 hours to midnight
WindDir9am	Direction of the wind at 9am
WindDir3pm	Direction of the wind at 3pm
WindSpeed9am	Wind speed (km/hr) averaged over 10 minutes prior to 9am
WindSpeed3pm	Wind speed (km/hr) averaged over 10 minutes prior to 3pm
Humidity9am	Humidity (percent) at 9am
Humidity3pm	Humidity (percent) at 3pm
Pressure9am	Atmospheric pressure (hpa) reduced to mean sea level at 9am
Pressure3pm	atmospheric pressure (hpa) reduced to mean sea level at 3pm
Cloud9am	Fraction of sky obscured by cloud at 9am.
Cloud3pm	Fraction of sky obscured by cloud at 3pm.
Temp9am	Temperature (degrees C) at 9am
Temp3pm	Temperature (degrees C) at 3pm
RainToday	1 if precipitation exceeds 1mm, otherwise 0
RISK MM	The amount of next day rain in mm.
RainTomorrow	The target variable. Did it rain tomorrow?

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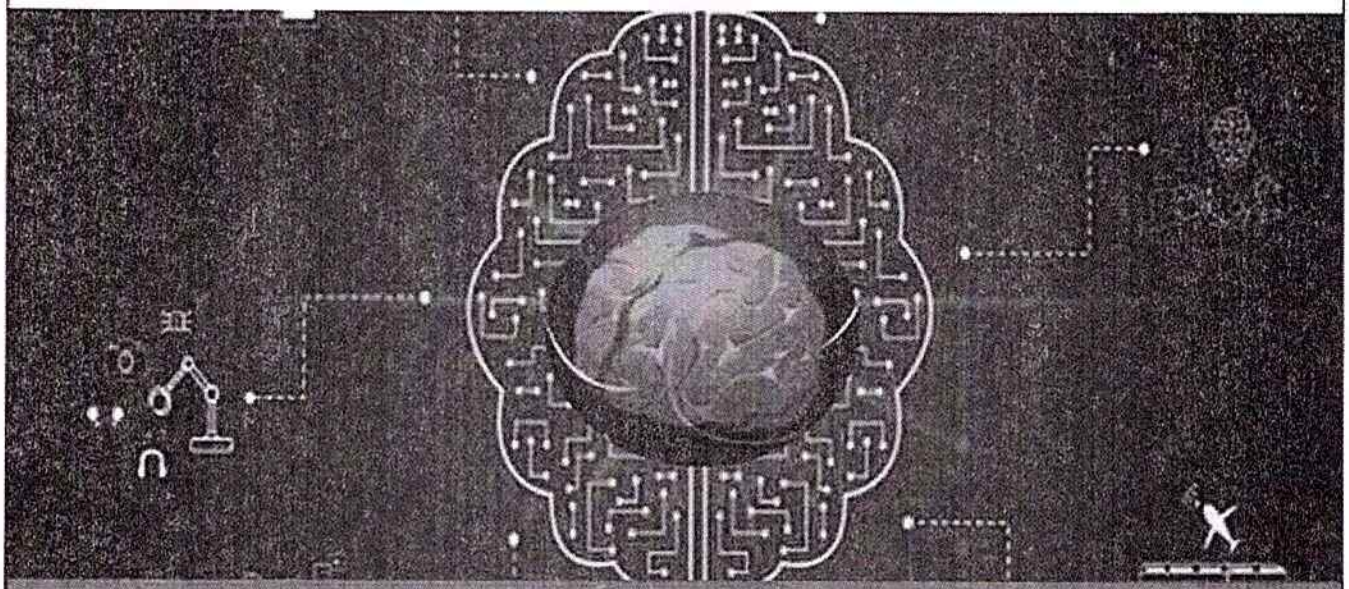

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-

REF. NO	TITLE OF THE PAPER AND AUTHOR(S)	Page No.
	Artificial Intelligence and Its Emerging Areas -NEC-ICAIIA 2K21	
1.	A Data Mining Based Model For Detection Of Deceitful Behaviour In Water Consumption - Tejasri Choudi.B.V.Satish, V.Naga Jyothi, K.Navya	1-5
2	A Machine Learning Framework For Prediction Of Heart Disease, Ramasetty Ramu.Kota Jagadeesh.Chanti Rajamohan Reddy.V. Mahesh Babu	6-10
3	A Supervised Learning Algorithm For Credit Card Fraud Detection. - Guggilam Sai Sri, Gummadilli Gouthami, Potluri Srividya, M. Mamatha	11-15
4	Amazon Product Review Sentiment Analysis Using Machine Learning - Ms Mohammad Arsha Sultana.P. Rakesh, M. Sandeep, G. Jagadeesh	16-20
5	An Interactive Study Of Thyroid Disease Prediction Using Machine Learning - D. Lokesh Gupta, D.Lokesh Gupta, K.V.Narasimha Reddy, D.Ramesh, V.Veerendra	21-25
6	Autoregressive Integrated Moving Average Model For Prediction Of Crypto Currency. - Pokuri Jaya Venkata Naga Sudhakar.Alladi Anil.Avula Venkata Rami Reddy.V. Mahesh Babu	26--29
7	Biometric Identification Scheme With Efficient Privacy-Preserving Mechanism For Cloud Computing Service. - Shaik Ruksana.Bandaru Naga Siva Saisuryatejaswi.Yadavalli Yedukondalu.M Mamatha	30-34
8	Bitcoin Price Prediction -Mrs R.Padmaja,K.V.D Hanisha, B Amulya, M Harika	35-38
9	Calories Burned Prediction, - Niharika Motupalli, B.Siva Kanaka Raju Shaik Mehataj , U. Jhansi Rani, T .Bhavani	39-45
10	Cartoonize Image Using Deep Learning - Gouse Mastan Vali.D.Vamsi Krishna, A.Sairam,K.S.Lakshmi Narayana	46-54
11	Children Speech Recognition Using Machine Learning Methodologies - Dr.T.V.Sai Krishna, R Venkat	55-60

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12	Clarification Of Webbing Through Cloud Computing Technologies - Amara.S.A.L.G.Gopala Gupta.Dr. Gudapati Syam Prasad	61-65
13	Convolutional Lstm Model For Sentiment Analysis On Social Big Data - Raghuveer Pachipulusu.V.Ananth Reddy, R.Sai Kiran, T.Vignesh	66-72
14	Data Preprocessing For Efficient Prediction In Customer Relationship Management. - Patur Ganga, K.Arun	73-78
15	Design And Experimental Study Of Automatic Colour Sorting By A Robotic Arm System - T.Lakshmibai	79-82
16	Detection Of Autism Disorder Based On Eeg Signal Using Deep Learning Methods -Ranjani M.P.Supraja	83-87
17	Detection Of Online Public Shaming With Offensive Content On Twitter. - Gutta Sai Durga.Gopu Sandhya.Jonnalagadda Madhavi, Dr. S.V.N.Srinivasu	88-91
18	Detection Of Phishing Attacks Using Natural Language Processing And Logistic Regression Model. - Surubula Thirupathi Rao.Pothukuchi Mahesh Babu.Rayala Venu.V. Mahesh Babu	92-98
19	Detection Of Social Network Mental Disorders Through Mining Of Online Social Media. - Battula Venkata Ananta Mehar Gopi.Rajarapu Venu Babu.Maddineni Naveen .Dr. S.V.N.Srinivasu	99-103
20	predections in healthy population through machine learning	104-108
21	Diabetics Prediction using Machine Learning Techniques, - Pathan Sajida, S.Amulya , V.Nandhini	109-114
22	DL-CNN Framework For Malicious Social Bots Detection, - Syed Fathima,Ponnapati Mallika,Gandru Akhilendra Chowdary,M. Mamatha	115-120
23	Door Security System Using Face Recognition -Dr A Srinivasa Rao.K.G.J.Prasanth, M. Rama Rao	121-123
24	ECG Classification With Convolutional Neural Networks - S V N Sreenivasu,T Bhargavika,B Anusha ,P Jayasri	124-129
25	Emotion Recognition From Multimodal Data(Speech, Video, Text) Based On Deep Learning Techniques D.P.Supraja	130-137

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26	Estimation Of Population Analysis - Tarun.G.Tarun.T.Purnavamsi.K.Vivekreddy	138-142
27	Eye Ball Cursor Movement Using Opencv - B.Preethi.D.Bharadwaja.B.Preethi. K.Charithra Lavanya.N.Sony	143-147
28	Face,Age And Gender Recogntion System Based on Deep Neural Networks - Gudapati Syam Prasad.K.Narendra Babu.N.Hemanth Kumar.K.Sriniivas	148-154
29	Facial Expression Recognition With Convolutional Neural Networks - S. Siva Nageswara Rao.S.Ramya. T.Anantha Lavanya	155-162
30	Fake Currency Detection. - Mr.Sk.K.M.Basha , Yalagala Hema Latha. Gatakala Venkata Sravya Bhavani. Macharla Maitili	163-167
31	Fake News Detection - Gangasani Likitha. I. Navya Sri. D. Swetha	168-175
32	Fake News Detection Using Machine Learning - Srikanth Mylapalli,Mylapalli Ramesh	176-180
33	Forest Fires Detection Using Machine Learning Algorithms - N.S.Sesi Kiran.P. Lakshmi Narayana. Sk. Mastanvali. P. Nivas	181-185
34	Functioning Of Artificial Intelligence In An Self-Driving Vehicle - A Review -Penugonda Surya Teja.None	186-189
35	Generic Recommendation Engine Using Hybrid Filtering Model - G Prabhakara Reddy,O Ramesh. Ch Anil	190-200
36	Head Motion Detection - Dr A Srinivasa Rao,M.Prathyusha. Y.Rajeswari	201-203
37	Heart Disease Prediction Using Machine Learning - Jhansi Lakshmi Manukonda ,R. V. P. S. Rekha. T. Divya. G. L. N. Jayaprada	204-208
38	House Price Prediction - Bodlapati Sowmya Reddy.M. Yamini Priya. P. Manasa	209-213
39	Image Captioning Using Deep Learning - Y E V Pratap Kumar Kuchi.M.Sireesha. G. Sai Akhil. K. Hema Sai Mourya Gupta	214-219

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NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

40	Image Classification Using Object Detection With YOLO Algorithm. Shaik Bhadhar Shareef.Putchakayala Ramesh.Angajala Anil.G. Sambasiva Rao	220-223
41	Implementation Of Video Steganography Cryptography System For Iot-Based Cloud Computing Security. - Sanivarapu Sagar Reddy.Mallavarapu Nikhil.Chevala Venkatesh.Dr. S V N Srinivasu	224-228
42	Inform Me-Family Gps Locator - Oruganti Ramesh.G Prabhakara Reddy. Ch. Anil	229-233
43	Ipl Score Prediction Using Machine Learning Methods - Rajyalakshmi Dondapati.N.Likitha.M.Anmisha	234-241
44	Liver Disease Prediction Using Machine Learning Methods - Sravana Sandhya Rani Karnati.K. Sravana Sandhya Rani, B.V.Gayithri.K.Vijayalakshmi	242-249
45	Loan Prediction System - Divya Gopavarapu.K.Manasa.A.Akhila.M.Sireesha	250-255
46	Lung Cancer Prediction - Naga Mallika Gude.M. Navya Sri. B. Sukanya	256-263
47	Map Reduced Segmentation Clustering For Big Data Analytics Using Extended K-Mean Clustering Technique - Mvs.Prasad	264-270
48	Mask R-Cnn For Fire Detection - Razeena Begum Shaik.S Yogananda Datta , M S V Manoj	271-276
49	Melanoma Prediction Using Deep Learning - Aishwarya Nallapati.D. Jaya Tejaswini. J. Prashanthi. T. Siri Chandana	277-280
50	Multilevel Hierarchy Based Privacy Preserved Profile Publishing In Cloud Environment. - Esthala Abhishek.Kambhampati Adinarayana.Battula Ramesh.G. Sambasiva Rao	281-286
51	Music Recommendation Application Based On Facial Expressions - Ms Mohammad Arsha Sultana.Abdul Saherabegum, Akhila Umma, Guthula Jayasri Sai Nikitha	287-290
52	Mutual Fund Prediction Using Machine Learning - Shaik Nannu Saidavali.N.Vinay Chandra Pal, K.Bhaskar Reddy	291-295
53	Network Coding Techniques To Store The Data Securely In Cloud. - Guru Brahmam Madala, Vijay Anand R	296-301
54	Network Spam And Fake User Detection In Online Social Networks Using Support Vector Machine. - Majeti Pavan Kalyan.Anchula Sreekanth.Ravi Mahesh Babu.G. Sambasiva Rao	302-307
55	Next Word Prediction Using Recurrent Neural Networks - Srikanth Kolisetty.B. Venkateswarlu, S. Siva Sai Kumar, T. Uday Kumar	308-313

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56	Nobel Methodologies For Immigration Of Service Oriented Architecture Based Applications To Microservice Architecture - M Madhu Sudhan, P Indupriyankaray, Aelluri Lakshmi, M Sreenandan Reddy	314-317
57	Plant Leaf Disease Detection System Using Resnet-50 - Chappa.Ramya Sai,K.Kavya,K.Meghana,A.Tulasi	318-321
58	Predicting The Survival Of Patients With Heart Failure-Machine Learning Methods - Hemalatha Tatiparthi,G.Mounika,K.Prasanthi,G.Hemavani	322-329
59	Prediction Of Agriculture Yields Using Machine Learning Algorithms. - Katepalli Sai Sravanthi,Grandhisila Venkatanagalakshmipravallika,Kollipara Harika ,M. Mamatha	330-335
60	Prediction Of Covid 19 Epidemics Using Data Analytics - S.Anil Kumar,G.Sathar	336-343
61	Prediction Of Covid Readmissions Using Machine Learning - Athukuri Lakshmi Narendra Kumar,B.V.V.N.Sai Kumar	344-347
62	Rainfall Prediction Using Machine Learning - Anusha Bhavanam,Ch. Vyshnavi, Ch.Priyanka	348-353
63	Review On Load Balancing Using Cloud Computing - J Raghunath ,A Chandra Sekhar, Shaik Razia, D Venkatesh	354-362
64	Road Safety And Vehicle Accident Prevention - G.Gayatri,G.Gayatri,K.Sugunitha	363-367
65	Sensile Soil Analyzing Application - Mathi Raasi,G.Santhi Sri,M Sravya,Shaik Khaja Mohiddin Basha	368-373
66	Sentiment Analysis Of Movie Reviews Using Ml -Mukunda Gagula,Lakshma Reddy,Sai Venkatesh,Shaik Rafi	374-377
67	Supevised Learning Models for perception of Multi-Trafic Scene	378-383
68	Smart Parking System Using Web Application, - K Razeena Begum, S Anand, K Vivek, K Manideep	384-387

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69	Social Distance Monitoring Using Deep Learning - Satuluri Vijaya Lakshmi.K.K.N. Bhuvaneswari. B.Vijaya Lakshmi	388-398
70	Stock Value Prediction Using Regression - B.Jhansi Vazram. G.Venkatrao. D.Srtinivasa Reddy. V.Ashok Kumar	399-404
71	Summarized Reviews With Attention Mechanism Using Lstm - Tahfeem Shaik.Sirajuddin,Shaikrafi	405-408
72	Supervised Learning For Fraud And Malware Detection From Android Applications. - Tunuguntla Bala Bhaskar Rao ,Dronadula Narendra. Maddu Phanindra Kumar.Dr. S.V.N.Srinivasu	409-415
73	Trust-Based Privacy Preserving Photo Sharing In Online Social Networks - Mrs R.Padmaja,Sk.Shahnoor. N.Nikhila. L.Thanusha	416-419
74	Useableness And Applications Of Blockchain Technology In Cloud Computing Environment - D Venkatesh,M Vijaya Bhaskar. J Raghunath. D Raghava Raju	420-426
75	Weather Prediction - Kotha Tharun Teja,G.Ashok,K.Raviteja,N.Raviteja	427-431
76	Wholesale And Retail Store Management System - Mr K Siva Rama Krishna,Saranya Bala.Y ,Triveni.V , Sai Divya	432-435

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Prediction of Covid Readmissions Using Machine Learning

K.LakshmiNadh[1],Athukuri Lakshmi Narendra Kumar[2], Bommidala Vasu Venkata Naga Sai Kumar[3].

[1]*professor, Department of CSE, Narasaraopet Engineering College,Guntur, Narasaraopeta,Guntur(D.T)A.P,INDIA-52201*
[2,3]*Student, Department of CSE, Narasaraopet Engineering College,Guntur, Narasaraopeta,Guntur(D.T)A.P, INDIA-52201*

[1]*lakshminadh37@gmail.com* [2]*a.l.narendra1229@gmail.com,* [3]*saivasukumar@gmail.com,*

ABSTRACT

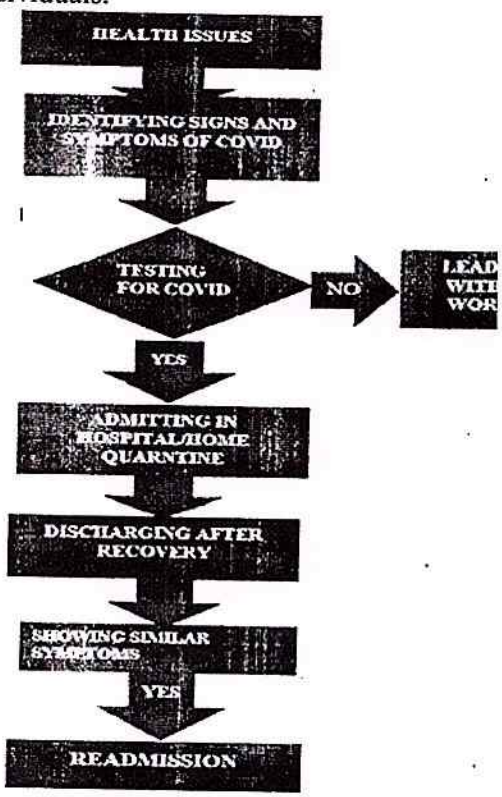
SARS-COV-2 is another Covid that begun in bats that arose in Wuhan, China in 2019 has spread universally and caused Thousands of Deaths, and colossally affecting living souls. Accordingly, medical clinics are brimming with Coronavirus patients. So there are just restricted assets like ICU offices, no. of beds, specific specialists accessible in each emergency clinic. They couldn't offer particular types of assistance to the basic patient. So by utilizing Machine Learning we can examine the danger factors for emergency clinic readmissions, which can help in assigning such restricted assets to basic patients moreover. So by utilizing AI model methodologies we can anticipate the unfavorable elements for the danger and can lessen the undesirable readmissions. A crisis emergency clinic readmission is a point where a patient who is delivered from the emergency clinic, gets re-yielded again inside a particular period. So by utilizing Machine Learning we can break down the danger factors for medical clinic readmissions, which can help in apportioning such restricted assets to basic patients too. So by utilizing AI model methodologies we can foresee the unfriendly factors for the danger and can decrease the undesirable readmissions. The quantity of affirmations of Coronavirus distance patients was expanding every now and then in different medical clinics. As we can see there are likewise a few readmissions additionally happens in certain emergency clinics. So to diminish the readmission of covid19 patients, we propose a procedure that usages Machine learning advancement to take a gander at the facility records of various patients. We have utilized different Covid-19 dataset highlights for our procedure to foresee the readmission likelihood paces of different patients Predicting the readmission rate early can mitigate the monetary and clinical results.

Watchwords: Covid-19,Machine Learning, Predictive Analysis, Hospital Readmissions,Covid-19 Deaths

I. INTRODUCTION

Coronaviruses(CoVs) are an enormous gathering of infections. We can't see them with our eyes, we need an amplifying instrument to seethem. Crown implies crown. Extreme intense respiratory syndrome(SARS) CoV arose in Guangdong,China, in 2002. Center eastern respiratory syndrome(MERS) CoV arose in the center east, in 2012.SARS-CoV2 arose in Wuhan, China, in 2019.SARS-CoV-2 is started in bats. Contaminates people through gentle respiratory disease. Interesting Covid infections have skiped species and can be sent between people. The Covid disease(COVID-

19) is quickly spread everywhere on the world and caused Thousands of Deaths and contaminated large number of individuals.



Covid patients Readmission-

Medical clinic readmission is where a patient who is delivered from the clinic, gets re-yielded again inside a particular period. Emergency clinic readmissions are basically answerable for the standing of the medical clinic. Accordingly this carries a repulsive name to the clinic and is additionally considered as a demonstration of recklessness of specialists. The quantity of affirmations of Coronavirus

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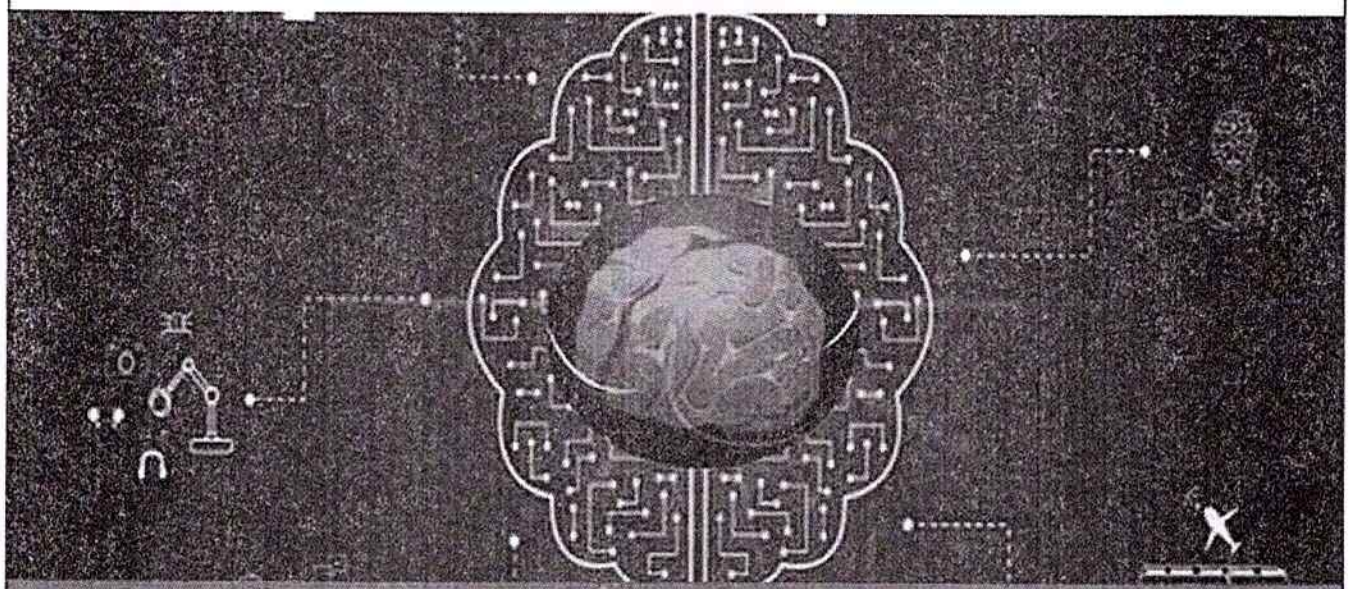

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29	Facial Expression Recognition With Convolutional Neural Networks - S. Siva Nageswara Rao.S.Ramya. T.Anantha Lavanya	155-162
30	Fake Currency Detection. - Mr.Sk.K.M.Basha , Yalagala Hema Latha. Gatakala Venkata Sravya Bhavani. Macharla Maitili	163-167
31	Fake News Detection - Gangasani Likitha. I. Navya Sri. D. Swetha	168-175
32	Fake News Detection Using Machine Learning - Srikanth Mylapalli.Mylapalli Ramesh	176-180
33	Forest Fires Detection Using Machine Learning Algorithms - N.S.Sesi Kiran.P. Lakshmi Narayana. Sk. Mastanvali. P. Nivas	181-185
34	Functioning Of Artificial Intelligence In An Self-Driving Vehicle - A Review -Penugonda Surya Teja.None	186-189
35	Generic Recommendation Engine Using Hybrid Filtering Model - G Prabhakara Reddy.O Ramesh. Ch Anil	190-200
36	Head Motion Detection - Dr A Srinivasa Rao.M.Prathyusha. Y.Rajeswari	201-203
37	Heart Disease Prediction Using Machine Learning - Jhansi Lakshmi Manukonda .R. V. P. S. Rekha. T. Divya. G. L. N. Jayaprada	204-208
38	House Price Prediction - Bodlapati Sowmya Reddy.M. Yamini Priya. P. Manasa	209-213
39	Image Captioning Using Deep Learning - Y E V Pratap Kumar Kuchi.M.Sireesha. G. Sai Akhil. K. Hema Sai Mourya Gupta	214-219

IQAC

Principal
NARASARAOPETA ENGINEERING COLLEGE
(AUTONOMOUS)
NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

40	Image Classification Using Object Detection With YOLO Algorithm. Shaik Bhadhar Shareef.Putchakayala Ramesh.,Angajala Anil,G. Sambasiva Rao	220-223
41	Implementation Of Video Steganography Cryptography System For Iot-Based Cloud Computing Security. - Sanivarapu Sagar Reddy,Mallavarapu Nikhil,Chevala Venkatesh,Dr. S.V.N Srinivasu	224-228
42	Inform Me-Family Gps Locator - Oruganti Ramesh,G Prabhakara Reddy. Ch. Anil	229-233
43	Ipl Score Prediction Using Machine Learning Methods - Rajyalakshmi Dondapati,N.Likitha,M.Anmisha	234-241
44	Liver Disease Prediction Using Machine Learning Methods - Sravana Sandhya Rani Karnati,K. Sravana Sandhya Rani, B.V.Gayithri,K.Vijayalakshmi	242-249
45	Loan Prediction System - Divya Gopavarapu,K.Manasa,A.Akhila,M.Sireesha	250-255
46	Lung Cancer Prediction - Naga Mallika Gude,M. Navya Sri, B. Sukanya	256-263
47	Map Reduced Segmentation Clustering For Big Data Analytics Using Extended K-Mean Clustering Technique - Mvs.Prasad	264-270
48	Mask R-Cnn For Fire Detection - Razeena Begum Shaik,S Yogananda Datta , M S V Manoj	271-276
49	Melanoma Prediction Using Deep Learning - Aishwarya Nallapati,D. Jaya Tejaswini, J. Prashanthi, T. Siri Chandana	277-280
50	Multilevel Hierarchy Based Privacy Preserved Profile Publishing In Cloud Environment. - Esthala Abhishek,Kambhampati Adinarayana,Battula Ramesh,G. Sambasiva Rao	281-286
51	Music Recommendation Application Based On Facial Expressions - Ms Mohammad Arsha Sultana,Abdul Saherabegum, Akhila Umma, Guthula Jayasri Sai Nikitha	287-290
52	Mutual Fund Prediction Using Machine Learning - Shaik Nannu Saidavali,N.Vinay Chandra Pal, K.Bhaskar Reddy	291-295
53	Network Coding Techniques To Store The Data Securely In Cloud. - Guru Brahmam Madala, Vijay Anand R	296-301
54	Network Spam And Fake User Detection In Online Social Networks Using Support Vector Machine. - Majeti Pavan Kalyan,Anchula Sreekanth,Ravi Mahesh Babu,G. Sambasiva Rao	302-307
55	Next Word Prediction Using Recurrent Neural Networks - Srikanth Kolisetty,B. Venkateswarlu, S. Siva Sai Kumar, T. Uday Kumar	308-313

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56	Nobel Methodologies For Immigration Of Service Oriented Architecture Based Applications To Microservice Architecture - M Madhu Sudhan, P Indupriyankaray, Aelluri Lakshmi, M Sreenandan Reddy	314-317
57	Plant Leaf Disease Detection System Using Resnet-50 - Chappa.Ramya Sai,K.Kavya,K.Meghana,A.Tulasi	318-321
58	Predicting The Survival Of Patients With Heart Failure-Machine Learning Methods - Hemalatha Tatiparthi,G.Mounika,K.Prasanthi,G.Hemavani	322-329
59	Prediction Of Agriculture Yields Using Machine Learning Algorithms. - Katepalli Sai Sravanthi,Grandhisila Venkatanagalakshmipravallika,Kollipara Harika ,M. Mamatha	330-335
60	Prediction Of Covid 19 Epidemics Using Data Analytics - S.Anil Kumar,G.Sathar	336-343
61	Prediction Of Covid Readmissions Using Machine Learning - Athukuri Lakshmi Narendra Kumar,B.V.V.N.Sai Kumar	344-347
62	Rainfall Prediction Using Machine Learning - Anusha Bhavanam,Ch. Vyshnavi, Ch.Priyanka	348-353
63	Review On Load Balancing Using Cloud Computing - J Raghunath ,A Chandra Sekhar, Shaik Razia, D Venkatesh	354-362
64	Road Safety And Vehicle Accident Prevention - G.Gayatri,G.Gayatri,K.Sugunitha	363-367
65	Sensile Soil Analyzing Application - Mathi Raasi,G.Santhi Sri,M Sravya,Shaik Khaja Mohiddin Basha	368-373
66	Sentiment Analysis Of Movie Reviews Using Ml -Mukunda Gagula,Lakshma Reddy,Sai Venkatesh,Shaik Rafi	374-377
67	Supevised Learning Models for perception of Multi-Trafic Scene	378-383
68	Smart Parking System Using Web Application. - K Razeena Begum, S Anand, K Vivek, K Manideep	384-387

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69	Social Distance Monitoring Using Deep Learning - Satuluri Vijaya Lakshmi.K.K.N. Bhuvaneswari. B.Vijaya Lakshmi	388-398
70	Stock Value Prediction Using Regression - B.Jhansi Vazram. G.Venkatrao. D.Srtinivasa Reddy. V.Ashok Kumar	399-404
71	Summarized Reviews With Attention Mechanism Using Lstm - Tahfeem Shaik,Sirajuddin,Shaikrafi	405-408
72	Supervised Learning For Fraud And Malware Detection From Android Applications. - Tunuguntla Bala Bhaskar Rao ,Dronadula Narendra. Maddu Phanindra Kumar.Dr. S.V.N.Srinivasu	409-415
73	Trust-Based Privacy Preserving Photo Sharing In Online Social Networks - Mrs R.Padmaja,Sk.Shahnoor. N.Nikhila. L.Thanusha	416-419
74	Useableness And Applications Of Blockchain Technology In Cloud Computing Environment - D Venkatesh,M Vijaya Bhaskar. J Raghunath. D Raghava Raju	420-426
75	Weather Prediction - Kotha Tharun Teja,G.Ashok,K.Raviteja,N.Raviteja	427-431
76	Wholesale And Retail Store Management System - Mr K Siva Rama Krishna,Saranya Bala.Y ,Triveni.V . Sai Divya	432-435

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Network Coding Techniques to store the Data Securely in Cloud

[1]Guru Brahmam Madala, [2]Dr. T. V. Sai Krishna, [3]Dr. Deepak Nedunuri

[1]Research Scholar, School of Information Technology,

[1]Vellore Institute of Technology, Vellore, India

[2]Professor, CSE

[2]Narasaraopeta Engineering College, Nasaraopet, India.

[2]dr.saikrishna007@gmail.com

[3]Associate Professor, CSE.
Sir C R Reddy College of Engineering, Eluru, India

[3]nedunurideepak@gmail.com

Abstract—**Cloud service providers offer stockpiling re-appropriating office to their customers. In a secure cloud stockpiling (SCS) convention, the respectability of the customer's information is kept up. In this work, we develop an openly evident secure cloud stockpiling convention in view of a secure organization coding (SNC) convention where the customer can refresh the rethought information on a case by case basis. To the best of our insight, our plan is the primary SNC-based SCS convention for dynamic information that is secure in the norm model and gives protection saving reviews in a freely undeniable setting. Besides, we examine, in subtleties, about the (im) possibility of giving an overall development of an productive SCS convention for dynamic information (DSCS convention) from a subjective SNC convention. Also, we change an existing DSCS conspire (DPDP I) to help privacy preserving reviews. We additionally contrast our DSCS convention and different SCS plans (counting the adjusted DPDP I conspire). At last, we sort out certain impediments of a SCS conspire built utilizing a SNC convention.**

Keywords—*scs convention, snc convention,*

1. INTRODUCTION

CLOUD stockpiling is as a rule broadly embraced because of the fame of cloud registering. Notwithstanding, ongoing reports [1], [2] demonstrate that information misfortune can happen in cloud stockpiling providers (CSPs). Consequently, the issue of checking the honesty of the information in cloud stockpiling, which we alluded to as secure cloud stockpiling (SCS), has pulled in a great deal of consideration. On the other hand, organizing coding, which was proposed to improve the organization limit, likewise deals with the issue of trustworthiness checking. A moderate switch may deliberately dirty code words, which brings about deciphering disappointments at the endpoints. Checking the trustworthiness of code words is alluded to as the secure organization coding issue. Various scientists have examined secure cloud stockpiling and secure organization coding autonomously. Answers for the previous issue, e.g., [3], [4], [5], were proposed as of late. Conversely, the last territory has been analyzed for more than ten years, e.g., [6]. [7]. Secure cloud stockpiling. This issue was first proposed by Juels and Kaliski [3] and Ateniese et al. [4].. Two principle elements are engaged with these conventions: a client and a cloud stockpiling supplier. A client re-appropriates the information to the cloud who vows to store the information. The client at that point affirms the information respectability by associating with the cloud utilizing a secure cloud capacity convention. The inspiration of information trustworthiness checking lies in a few elements. To start with, because of the helpless administration of the cloud, the client's information could be lost because of framework disappointments (equipment or programming). To cover the mishap, the cloud may decide to mislead the client. Second, the cloud has a gigantic monetary motivating force to dispose of the information which is once in a while gotten to by the client. Disregarding some piece of the information makes a difference the cloud to diminish its expense. Third, a cloud could likewise be hacked and the information could be altered. Fourth, a cloud may carry on malevolently on account of different conceivable government

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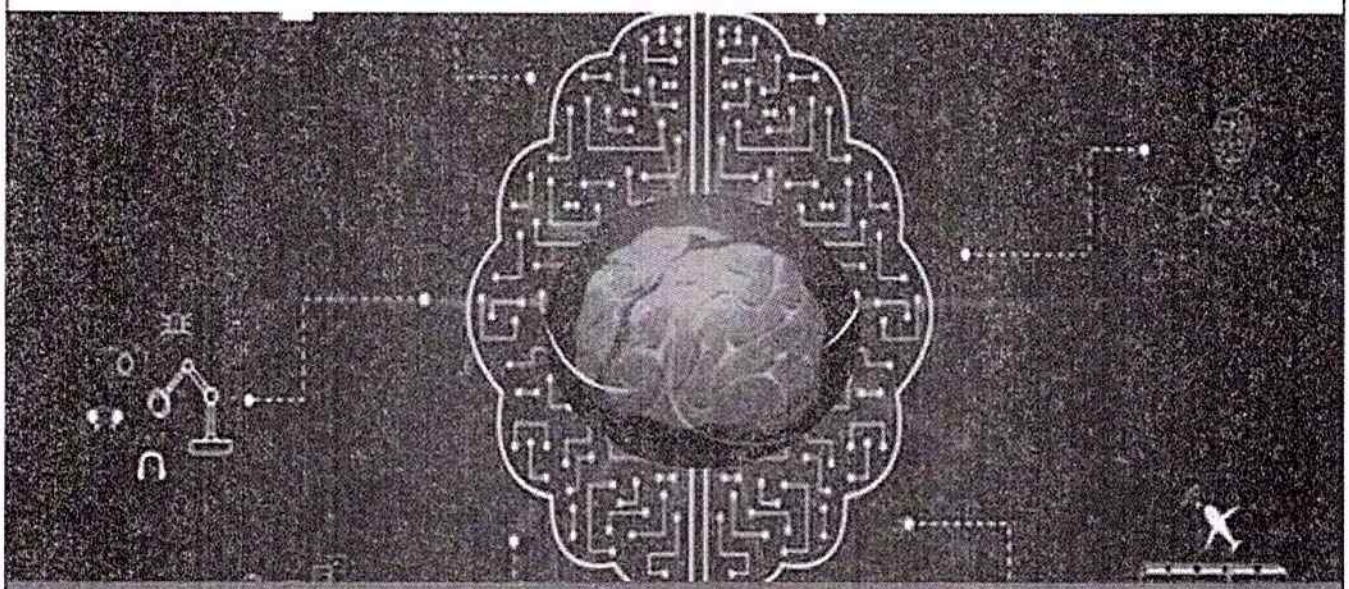

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-

REF. NO	TITLE OF THE PAPER AND AUTHOR(S)	Page No.
	Artificial Intelligence and Its Emerging Areas -NEC-ICAIIA 2K21	
1.	A Data Mining Based Model For Detection Of Deceitful Behaviour In Water Consumption - Tejasri Choudi,B.V.Satish, V.Naga Jyothi, K.Navya	1-5
2	A Machine Learning Framework For Prediction Of Heart Disease. Ramasetty Ramu,Kota Jagadeesh,Chanti Rajamohan Reddy,V. Mahesh Babu	6-10
3	A Supervised Learning Algorithm For Credit Card Fraud Detection. - Guggilam Sai Sri, Gummadilli Gouthami, Potluri Srividya, M. Mamatha	11-15
4	Amazon Product Review Sentiment Analysis Using Machine Learning - Ms Mohammad Arsha Sultana,P. Rakesh, M. Sandeep, G. Jagadeesh	16-20
5	An Interactive Study Of Thyroid Disease Prediction Using Machine Learning - D. Lokesh Gupta, D.Lokesh Gupta, K.V.Narasimha Reddy, D.Ramesh, V.Veerendra	21-25
6	Autoregressive Integrated Moving Average Model For Prediction Of Crypto Currency. - Pokuri Jaya Venkata Naga Sudhakar,Alladi Anil,Avula Venkata Rami Reddy,V. Mahesh Babu	26--29
7	Biometric Identification Scheme With Efficient Privacy-Preserving Mechanism For Cloud Computing Service, - Shaik Ruksana,Bandaru Naga Siva Satsuryatejaswi,Yadavalli Yedukondalu,M Mamatha	30-34
8	Bitcoin Price Prediction -Mrs R.Padmaja,K.V.D Hanisha, B Amulya, M Harika	35-38
9	Calories Burned Prediction, - Niharika Motupalli, B.Siva Kanaka Raju Shaik Mehataj , U. Jhansi Rani, T .Bhavani	39-45
10	Cartoonize Image Using Deep Learning - Gouse Mastan Vali,D.Vamsi Krishna, A.Sairam,K.S.Lakshmi Narayana	46-54
11	Children Speech Recognition Using Machine Learning Methodologies - Dr.T.V.Sai Krishna, R Venkat	55-60

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Principal
NARASARAOPETA ENGINEERING COLLEGE
(AUTONOMOUS)
NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

12	Clarification Of Webbing Through Cloud Computing Technologies - Amara.S.A.L.G.Gopala Gupta,Dr. Gudapati Syam Prasad	61-65
13	Convolutional Lstm Model For Sentiment Analysis On Social Big Data - Raghuveer Pachipulusu,V.Ananth Reddy, R.Sai Kiran, T.Vignesh	66-72
14	Data Preprocessing For Efficient Prediction In Customer Relationship Management, - Patur Ganga, K.Arun	73-78
15	Design And Experimental Study Of Automatic Colour Sorting By A Robotic Arm System - T.Lakshmibai	79-82
16	Detection Of Autism Disorder Based On Eeg Signal Using Deep Learning Methods -Ranjani M.P.Supraja	83-87
17	Detection Of Online Public Shaming With Offensive Content On Twitter. - Gutta Sai Durga,Gopu Sandhya,Jonnalagadda Madhavi, Dr. S.V.N.Srinivasu	88-91
18	Detection Of Phishing Attacks Using Natural Language Processing And Logistic Regression Model. - Surubula Thirupathi Rao,Pothukuchi Mahesh Babu,Rayala Venu,V. Mahesh Babu	92-98
19	Detection Of Social Network Mental Disorders Through Mining Of Online Social Media. - Battula Venkata Ananta Mehar Gopi,Rajarapu Venu Babu,Maddineni Naveen ,Dr. S.V.N.Srinivasu	99-103
20	predections in healthy population through machine learning	104-108
21	Diabetics Prediction using Machine Learning Techniques, - Pathan Sajida, S.Amulya , V.Nandhini	109-114
22	DL-CNN Framework For Malicious Social Bots Detection, - Syed Fathima,Ponnapati Mallika,Gandru Akhilendra Chowdary,M. Mamatha	115-120
23	Door Security System Using Face Recognition -Dr A Srinivasa Rao,K.G.J.Prasanth, M. Rama Rao	121-123
24	ECG Classification With Convolutional Neural Networks - S V N Sreenivasu,T Bhargavika,B Anusha ,P Jayasri	124-129
25	Emotion Recognition From Multimodal Data(Speech, Video, Text) Based On Deep Learning Techniques D.P.Supraja	130-137

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(AUTONOMOUS)
NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

26	Estimation Of Population Analysis - Tarun.G.Tarun.T.Purnavamsi.K.Vivekreddy	138-142
27	Eye Ball Cursor Movement Using Opencv - B.Preethi.D.Bharadwaja.B.Preethi. K.Charithra Lavanya.N.Sony	143-147
28	Face.Age And Gender Recogntion System Based on Deep Neural Networks - Gudapati Syam Prasad.K.Narendra Babu.N.Hemanth Kumar.K.Sriniivas	148-154
29	Facial Expression Recognition With Convolutional Neural Networks - S. Siva Nageswara Rao.S.Ramya. T.Anantha Lavanya	155-162
30	Fake Currency Detection. - Mr.Sk.K.M.Basha , Yalagala Hema Latha. Gatakala Venkata Sravya Bhavani. Macharla Maitili	163-167
31	Fake News Detection - Gangasani Likitha. I. Navya Sri. D. Swetha	168-175
32	Fake News Detection Using Machine Learning - Srikanth Mylapalli,Mylapalli Ramesh	176-180
33	Forest Fires Detection Using Machine Learning Algorithms - N.S.Sesi Kiran.P. Lakshmi Narayana. Sk. Mastanvali. P. Nivas	181-185
34	Functioning Of Artificial Intelligence In An Self-Driving Vehicle - A Review -Penugonda Surya Teja.None	186-189
35	Generic Recommendation Engine Using Hybrid Filtering Model - G Prabhakara Reddy,O Ramesh. Ch Anil	190-200
36	Head Motion Detection - Dr A Srinivasa Rao.M.Prathyusha. Y.Rajeswari	201-203
37	Heart Disease Prediction Using Machine Learning - Jhansi Lakshmi Manukonda ,R. V. P. S. Rekha. T. Divya. G. L. N. Jayaprada	204-208
38	House Price Prediction - Bodlapati Sowmya Reddy.M. Yamini Priya. P. Manasa	209-213
39	Image Captioning Using Deep Learning - Y E V Pratap Kumar Kuchi.M.Sireesha. G. Sai Akhil. K. Hema Sai Mourya Gupta	214-219

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NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

40	Image Classification Using Object Detection With YOLO Algorithm. Shaik Bhadhar Shareef,Putchakayala Ramesh.,Angajala Anil.G. Sambasiva Rao	220-223
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42	Inform Me-Family Gps Locator - Oruganti Ramesh,G Prabhakara Reddy. Ch. Anil	229-233
43	Ipl Score Prediction Using Machine Learning Methods - Rajyalakshmi Dondapati,N.Likitha,M.Anmisha	234-241
44	Liver Disease Prediction Using Machine Learning Methods - Sravana Sandhya Rani Karnati,K. Sravana Sandhya Rani, B.V.Gayithri,K.Vijayalakshmi	242-249
45	Loan Prediction System - Divya Gopavarapu,K.Manasa.A.Akhila,M.Sireesha	250-255
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49	Melanoma Prediction Using Deep Learning - Aishwarya Nallapati,D. Jaya Tejaswini, J. Prashanthi, T. Siri Chandana	277-280
50	Multilevel Hierarchy Based Privacy Preserved Profile Publishing In Cloud Environment. - Esthala Abhishek,Kambhampati Adinarayana,Battula Ramesh,G. Sambasiva Rao	281-286
51	Music Recommendation Application Based On Facial Expressions - Ms Mohammad Arsha Sultana,Abdul Saherabegum, Akhila Umma, Guthula Jayasri Sai Nikitha	287-290
52	Mutual Fund Prediction Using Machine Learning - Shaik Nannu Saidavali,N.Vinay Chandra Pal, K.Bhaskar Reddy	291-295
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54	Network Spam And Fake User Detection In Online Social Networks Using Support Vector Machine. - Majeti Pavan Kalyan,Anchula Sreekanth,Ravi Mahesh Babu,G. Sambasiva Rao	302-307
55	Next Word Prediction Using Recurrent Neural Networks - Srikanth Kolisetty,B. Venkateswarlu, S. Siva Sai Kumar, T. Uday Kumar	308-313

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56	Nobel Methodologies For Immigration Of Service Oriented Architecture Based Applications To Microservice Architecture - M Madhu Sudhan, P Indupriyankaray, Aelluri Lakshmi, M Sreenandan Reddy	314-317
57	Plant Leaf Disease Detection System Using Resnet-50 - Chappa.Ramya Sai,K.Kavya,K.Meghana,A.Tulasi	318-321
58	Predicting The Survival Of Patients With Heart Failure-Machine Learning Methods - Hemalatha Tatiparthi,G.Mounika,K.Prasanthi,G.Hemavani	322-329
59	Prediction Of Agriculture Yields Using Machine Learning Algorithms, - Katepalli Sai Sravanthi,Grandhisila Venkatanagalakshmipravallika,Kollipara Harika ,M. Mamatha	330-335
60	Prediction Of Covid 19 Epidemics Using Data Analytics - S.Anil Kumar,G.Sathar	336-343
61	Prediction Of Covid Readmissions Using Machine Learning - Athukuri Lakshmi Narendra Kumar,B.V.V.N.Sai Kumar	344-347
62	Rainfall Prediction Using Machine Learning - Anusha Bhavanam,Ch. Vyshnavi, Ch.Priyanka	348-353
63	Review On Load Balancing Using Cloud Computing - J Raghunath ,A Chandra Sekhar, Shaik Razia, D Venkatesh	354-362
64	Road Safety And Vehicle Accident Prevention - G.Gayatri,G.Gayatri,K.Sugunitha	363-367
65	Sensile Soil Analyzing Application - Mathi Raasi,G.Santhi Sri,M Sravya,Shaik Khaja Mohiddin Basha	368-373
66	Sentiment Analysis Of Movie Reviews Using Ml -Mukunda Gagula,Lakshma Reddy,Sai Venkatesh,Shaik Rafi	374-377
67	Supevised Learning Models for perception of Multi-Trafic Scene	378-383
68	Smart Parking System Using Web Application, - K Razeena Begum, S Anand, K Vivek, K Manideep	384-387

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69	Social Distance Monitoring Using Deep Learning - Satuluri Vijaya Lakshmi.K.K.N. Bhuvaneswari, B.Vijaya Lakshmi	388-398
70	Stock Value Prediction Using Regression - B.Jhansi Vazram, G.Venkatrao, D.Srtinivasa Reddy, V.Ashok Kumar	399-404
71	Summarized Reviews With Attention Mechanism Using Lstm - Tahfeem Shaik,Sirajuddin,Shaikrafi	405-408
72	Supervised Learning For Fraud And Malware Detection From Android Applications. - Tunuguntla Bala Bhaskar Rao ,Dronadula Narendra, Maddu Phanindra Kumar,Dr. S.V.N.Srinivasu	409-415
73	Trust-Based Privacy Preserving Photo Sharing In Online Social Networks - Mrs R.Padmaja,Sk.Shahnoor, N.Nikhila, L.Thanusha	416-419
74	Useableness And Applications Of Blockchain Technology In Cloud Computing Environment - D Venkatesh,M Vijaya Bhaskar, J Raghunath, D Raghava Raju	420-426
75	Weather Prediction - Kotha Tharun Teja,G.Ashok,K.Raviteja,N.Raviteja	427-431
76	Wholesale And Retail Store Management System - Mr K Siva Rama Krishna,Saranya Bala.Y ,Triveni.V , Sai Divya	432-435

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Lung Cancer Prediction Using Machine Learning Methods

G.Naga Mallika[1],CH.Anil[2], M.Navya Sri[3], B.Sukanya[4]
Student, Computer Science and Engineering

NarasaraopetaEngineering College, Narasaraopeta

mallikagude13@gmail.com,chintalapudianil5@gmail.com,navyasrimakkena099@gmail.com, bandarusukanya@gmail.com

25

I. ABSTRACT:

Lung cancer generally occurs in both male and female due to uncontrollable growth of cells in the lungs. This causes a serious breathing problem in both inhale and exhale part of chest. Cigarette smoking and passive smoking are the principal contributor for the cause of lung cancer as per world health organization. The mortality rate due to lung cancer is increasing day by day in youths as well as in old persons as compared to other cancers. Even though the availability of high tech Medical facility for careful diagnosis and effective medical treatment, the mortality rate is not yet controlled up to a good extent. Therefore it is highly necessary to take early precautions at the initial stage such that it's symptoms and effect can be found at early stage for better diagnosis. Machine learning now days has a great influence to health care sector because of its high computational capability for early prediction of the diseases with accurate data analysis.

II. INTRODUCTION:

Cancer is a disease in which cells in the body grow out of control. When cancer starts in the lungs, it is called Lung Cancer.Lung cancer begins in the lungs and may spread to lymph nodes or other organs in the body, such as the brain. Cancer from other organs also may spread to the lungs. When cancer cells spread from one organ to another, they are called Metastases.Lung cancer includes two main types: non-small cell lung cancer and small cell lung cancer. Smoking causes most lung cancers, but nonsmokers can also develop lung cancer.Cigarette smoking is the number one risk factor for lung cancer. In the United States, cigarette smoking is linked to about 80% to 90% of lung cancer deaths. Using other tobacco products such as cigars or pipes also increases the risk for lung cancer. Tobacco smoke is a toxic mix of more than 7,000 chemicals. Many are poisons. At least 70 are known to cause cancer in people or animals.

Classification algorithms are very important category of supervised machine learning algorithms. These algorithms require a very large training set. These training data sets are consisting of many features or attributes which describe the individual sample. Since we are doing supervised learning algorithm. All the training set are labelled correctly. The classification algorithms such as decision trees, Gaussian Naïve Bayes, Random Forest, K- nearest Neighbours, K-Means and support vector machines (SVM), develop model with these data with many different parameters. When we have a new unlabelled sample, we can use the model to predict the label of the new sample. These techniques are used for disease diagnosis to help doctor to effectively label the new case.

III. LITERATURE SURVEY

Machine learning is one of the applications of artificial intelligence (AI) that provides computers, the ability to learn automatically and improve from experience instead of explicitly programmed. It focuses on developing computer programs that can access data and use it to learn from themselves.The main aim is to allow computers to learn automatically without human intervention and also adjust actions accordingly.

PROPOSED SYSTEM:

a. Experimental setup

This experiment was conducted on Intel® Core™ i3 Processors with 64 bit Windows10. Anaconda 5.1.0 Python distribution is used in this experiment. The dataset used in this project is German lung cancer prevention dataset which is obtained from Kaggle Machine Learning repository. The dataset contains 7 attributes which are used to prevent lung cancer.**Fig.1.**showsthedatasetFig.2.showstheprocessoftheproposed system of Lung Cancer Prevention. **Fig. 3.** displays the attributes, domain and description about the attributes

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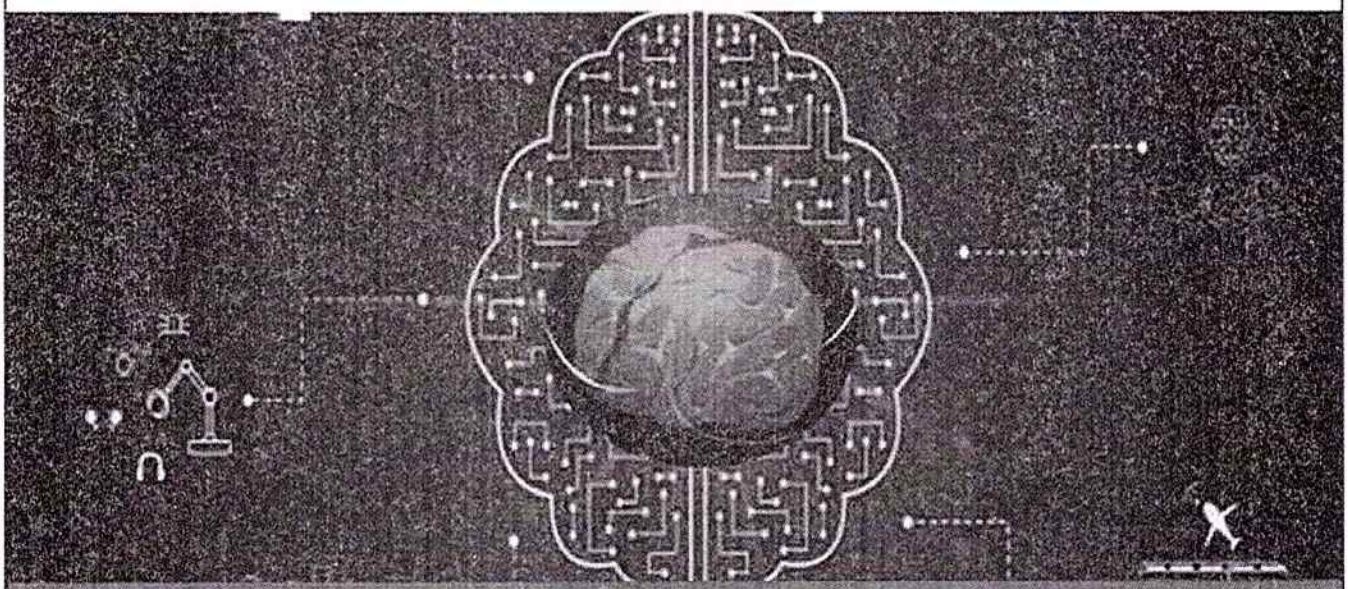

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	Artificial Intelligence and Its Emerging Areas -NEC-ICAIIA 2K21	
1.	A Data Mining Based Model For Detection Of Deceitful Behaviour In Water Consumption - Tejasri Choudi,B.V.Satish, V.Naga Jyothi, K.Navya	1-5
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4	Amazon Product Review Sentiment Analysis Using Machine Learning - Ms Mohammad Arsha Sultana,P. Rakesh, M. Sandeep, G. Jagadeesh	16-20
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7	Biometric Identification Scheme With Efficient Privacy-Preserving Mechanism For Cloud Computing Service. - Shaik Ruksana,Bandaru Naga Siva Saisuryatejaswi,Yadavalli Yedukondalu,M Mamatha	30-34
8	Bitcoin Price Prediction -Mrs R.Padmaja,K.V.D Hanisha, B Amulya, M Harika	35-38
9	Calories Burned Prediction. - Niharika Motupalli, B.Siva Kanaka Raju Shaik Mehataj , U. Jhansi Rani, T .Bhavani	39-45
10	Cartoonize Image Using Deep Learning - Gouse Mastan Vali,D.Vamsi Krishna, A.Sairam,K.S.Lakshmi Narayana	46-54
11	Children Speech Recognition Using Machine Learning Methodologies - Dr.T.V.Sai Krishna, R Venkat	55-60

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12	Clarification Of Webbing Through Cloud Computing Technologies - Amara.S.A.L.G.Gopala Gupta,Dr. Gudapati Syam Prasad	61-65
13	Convolutional Lstm Model For Sentiment Analysis On Social Big Data - Raghuveer Pachipulusu,V.Ananth Reddy. R.Sai Kiran. T.Vignesh	66-72
14	Data Preprocessing For Efficient Prediction In Customer Relationship Management. - Patur Ganga. K.Arun	73-78
15	Design And Experimental Study Of Automatic Colour Sorting By A Robotic Arm System - T.Lakshmibai	79-82
16	Detection Of Autism Disorder Based On Eeg Signal Using Deep Learning Methods -Ranjani M.P.Supraja	83-87
17	Detection Of Online Public Shaming With Offensive Content On Twitter. - Gutta Sai Durga,Gopu Sandhya,Jonnalagadda Madhavi, Dr. S.V.N.Srinivasu	88-91
18	Detection Of Phishing Attacks Using Natural Language Processing And Logistic Regression Model. - Surubula Thirupathi Rao,Pothukuchi Mahesh Babu,Rayala Venu,V. Mahesh Babu	92-98
19	Detection Of Social Network Mental Disorders Through Mining Of Online Social Media. - Battula Venkata Ananta Mehar Gopi,Rajarapu Venu Babu,Maddineni Naveen ,Dr. S.V.N.Srinivasu	99-103
20	predections in healthy population through machine learning	104-108
21	Diabetics Prediction using Machine Learning Techniques. - Pathan Sajida. S.Amulya , V.Nandhini	109-114
22	DL-CNN Framework For Malicious Social Bots Detection. - Syed Fathima,Ponnapati Mallika,Gandru Akhilendra Chowdary,M. Mamatha	115-120
23	Door Security System Using Face Recognition -Dr A Srinivasa Rao,K.G.J.Prasanth. M. Rama Rao	121-123
24	ECG Classification With Convolutional Neural Networks - S V N Sreenivasu,T Bhargavika,B Anusha ,P Jayasri	124-129
25	Emotion Recognition From Multimodal Data(Speech. Video. Text) Based On Deep Learning Techniques D.P.Supraja	130-137

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27	Eye Ball Cursor Movement Using Opencv - B.Preethi.D.Bharadwaja.B.Preethi. K.Charithra Lavanya.N.Sony	143-147
28	Face.Age And Gender Recogntion System Based on Deep Neural Networks - Gudapati Syam Prasad.K.Narendra Babu.N.Hemanth Kumar.K.Sriniivas	148-154
29	Facial Expression Recognition With Convolutional Neural Networks - S. Siva Nageswara Rao.S.Ramya. T.Anantha Lavanya	155-162
30	Fake Currency Detection. - Mr.Sk.K.M.Basha , Yalagala Hema Latha. Gatakala Venkata Sravya Bhavani. Macharla Maitili	163-167
31	Fake News Detection - Gangasani Likitha. I. Navya Sri. D. Swetha	168-175
32	Fake News Detection Using Machine Learning - Srikanth Mylapalli.Mylapalli Ramesh	176-180
33	Forest Fires Detection Using Machine Learning Algorithms - N.S.Sesi Kiran.P. Lakshmi Narayana. Sk. Mastanvali. P. Nivas	181-185
34	Functioning Of Artificial Intelligence In An Self-Driving Vehicle - A Review -Penugonda Surya Teja.None	186-189
35	Generic Recommendation Engine Using Hybrid Filtering Model - G Prabhakara Reddy.O Ramesh. Ch Anil	190-200
36	Head Motion Detection - Dr A Srinivasa Rao.M.Prathyusha. Y.Rajeswari	201-203
37	Heart Disease Prediction Using Machine Learning - Jhansi Lakshmi Manukonda .R. V. P. S. Rekha. T. Divya. G. L. N. Jayaprada	204-208
38	House Price Prediction - Bodlapati Sowmya Reddy.M. Yamini Priya. P. Manasa	209-213
39	Image Captioning Using Deep Learning - Y E V Pratap Kumar Kuchi.M.Sireesha. G. Sai Akhil. K. Hema Sai Mourya Gupta	214-219

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40	Image Classification Using Object Detection With YOLO Algorithm. Shaik Bhadhar Shareef.Putchakayala Ramesh.,Angajala Anil.G. Sambasiva Rao	220-223
41	Implementation Of Video Steganography Cryptography System For Iot-Based Cloud Computing Security. - Sanivarapu Sagar Reddy.Mallavarapu Nikhil.Chevala Venkatesh.Dr. S.V.N.Srinivasu	224-228
42	Inform Me-Family Gps Locator - Oruganti Ramesh.G Prabhakara Reddy. Ch. Anil	229-233
43	Ipl Score Prediction Using Machine Learning Methods - Rajyalakshmi Dondapati.N.Likitha.M.Anmisha	234-241
44	Liver Disease Prediction Using Machine Learning Methods - Sravana Sandhya Rani Karnati,K. Sravana Sandhya Rani, B.V.Gayithri,K.Vijayalakshmi	242-249
45	Loan Prediction System - Divya Gopavarapu,K.Manasa,A.Akhila,M.Sireesha	250-255
46	Lung Cancer Prediction - Naga Mallika Gude,M. Navya Sri, B. Sukanya	256-263
47	Map Reduced Segmentation Clustering For Big Data Analytics Using Extended K-Mean Clustering Technique - Mvs.Prasad	264-270
48	Mask R-Cnn For Fire Detection - Razeena Begum Shaik.S Yogananda Datta , M S V Manoj	271-276
49	Melanoma Prediction Using Deep Learning - Aishwarya Nallapati.D. Jaya Tejaswini, J. Prashanthi, T. Siri Chandana	277-280
50	Multilevel Hierarchy Based Privacy Preserved Profile Publishing In Cloud Environment. - Esthala Abhishek.Kambhampati Adinarayana.Battula Ramesh.G. Sambasiva Rao	281-286
51	Music Recommendation Application Based On Facial Expressions - Ms Mohammad Arsha Sultana,Abdul Saherabegum, Akhila Umma, Guthula Jayasri Sai Nikitha	287-290
52	Mutual Fund Prediction Using Machine Learning - Shaik Nannu Saidavali,N.Vinay Chandra Pal, K.Bhaskar Reddy	291-295
53	Network Coding Techniques To Store The Data Securely In Cloud. - Guru Brahmam Madala, Vijay Anand R	296-301
54	Network Spam And Fake User Detection In Online Social Networks Using Support Vector Machine. - Majeti Pavan Kalyan.Anchula Sreekanth.Ravi Mahesh Babu.G. Sambasiva Rao	302-307
55	Next Word Prediction Using Recurrent Neural Networks - Srikanth Kolisetty,B. Venkateswarlu, S. Siva Sai Kumar, T. Uday Kumar	308-313

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56	Nobel Methodologies For Immigration Of Service Oriented Architecture Based Applications To Microservice Architecture - M Madhu Sudhan, P Indupriyankaray, Aelluri Lakshmi, M Sreenandan Reddy	314-317
57	Plant Leaf Disease Detection System Using Resnet-50 - Chappa.Ramya Sai,K.Kavya,K.Meghana,A.Tulasi	318-321
58	Predicting The Survival Of Patients With Heart Failure-Machine Learning Methods - Hemalatha Tatiparthi,G.Mounika,K.Prasanthi,G.Hemavani	322-329
59	Prediction Of Agriculture Yields Using Machine Learning Algorithms. - Katepalli Sai Sravanthi,Grandhisila Venkatanagalakshmipravallika,Kollipara Harika ,M. Mamatha	330-335
60	Prediction Of Covid 19 Epidemics Using Data Analytics - S.Anil Kumar,G.Sathar	336-343
61	Prediction Of Covid Readmissions Using Machine Learning - Athukuri Lakshmi Narendra Kumar,B.V.V.N.Sai Kumar	344-347
62	Rainfall Prediction Using Machine Learning - Anusha Bhavanam,Ch. Vyshnavi, Ch.Priyanka	348-353
63	Review On Load Balancing Using Cloud Computing - J Raghunath ,A Chandra Sekhar, Shaik Razia, D Venkatesh	354-362
64	Road Safety And Vehicle Accident Prevention - G.Gayatri,G.Gayatri,K.Sugunitha	363-367
65	Sensile Soil Analyzing Application - Mathi Raasi,G.Santhi Sri,M Sravya,Shaik Khaja Mohiddin Basha	368-373
66	Sentiment Analysis Of Movie Reviews Using Ml -Mukunda Gagula,Lakshma Reddy,Sai Venkatesh,Shaik Rafi	374-377
67	Supevised Learning Models for perception of Multi-Trafic Scene	378-383
68	Smart Parking System Using Web Application. - K Razeena Begum, S Anand, K Vivek, K Manideep	384-387

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69	Social Distance Monitoring Using Deep Learning - Satuluri Vijaya Lakshmi.K.K.N. Bhuvaneswari, B.Vijaya Lakshmi	388-398
70	Stock Value Prediction Using Regression - B.Jhansi Vazram, G.Venkatrao, D.Srtinivasa Reddy, V.Ashok Kumar	399-404
71	Summarized Reviews With Attention Mechanism Using Lstm - Tahfeem Shaik,Sirajuddin,Shaikrafi	405-408
72	Supervised Learning For Fraud And Malware Detection From Android Applications. - Tunuguntla Bala Bhaskar Rao ,Dronadula Narendra, Maddu Phanindra Kumar,Dr. S.V.N.Srinivasu	409-415
73	Trust-Based Privacy Preserving Photo Sharing In Online Social Networks - Mrs R.Padmaja,Sk.Shahnoor, N.Nikhila, L.Thanusha	416-419
74	Useableness And Applications Of Blockchain Technology In Cloud Computing Environment - D Venkatesh,M Vijaya Bhaskar, J Raghunath, D Raghava Raju	420-426
75	Weather Prediction - Kotha Tharun Teja,G.Ashok,K.Raviteja,N.Raviteja	427-431
76	Wholesale And Retail Store Management System - Mr K Siva Rama Krishna,Saranya Bala.Y ,Triveni.V , Sai Divya	432-435

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Liver Disease Prediction Application - Machine Learning Methods

Shaik Khaja Mohiddin Basha[1], K.Sravana Sandhya Rani [2], B.V.Gayathri [3], K.Vijayalakshmi[4]

Student, Computer Science and Engineering

Narasaraopet Engineering College, Guntur

sk.basha579@gmail.com, ssrrkarnati@gmail.com,bachalagayathri2000@gmail.com,k.vijji1999@gmail.com

26

ABSTRACT

The main objective of this project is to predict liver disease from individuals.Liver is the largest gland in humans. It lies in the right upper quadrant of the abdomen. The most common liver diseases are tumour, abscess, cirrhosis, cist etc., Liver disease has a great deal of attention in medical research. Diagnosis of a liver disease at a preliminary stage is important for better treatment. It is a very challenging task for medical research to predict the disease in the early stages using the traditional systems. To overcome this issue and improve liver disease diagnosis machine learning approach is used. Machine learning is one of the applications of artificial intelligence (AI) that provides computers, the ability to learn automatically and improve from experience instead of explicitly programmed. It focuses on developing computer programs that can access data and use it to learn from themselves. The GUI developed in python can be readily used to serve the medical community.

*Keywords:*Decision Tree, Naive Bayes, Logistic Regression, Random Forest, XGBoost,Gradient Boosting, Liver Disease Prediction

I. INTRODUCTION

Machine learning is one of the applications of artificial intelligence (AI) that provides computers, the ability to learn automatically and improve from experience instead of explicitly programmed. It focuses on developing computer programs that can access data and use it to learn from themselves. The main aim is to allow computers to learn automatically without human intervention and also adjust actions accordingly. Liver disease has a great deal of attention in medical research. The diagnosis of liver disease is a challenging task, which can offer automated prediction about the liver condition of patient so that further treatment can be made effective. Liver is the largest gland in humans. It lies in the right upper quadrant of the abdomen. The most common liver diseases are tumour, abscess, cirrhosis, cist etc., It is a very challenging task for medical research to predict the disease in the early stages using the traditional systems. To overcome this issue and improve liver disease diagnosis machine learning approach is used. The GUI developed in python can be readily used to serve the medical community for liver disease prediction.

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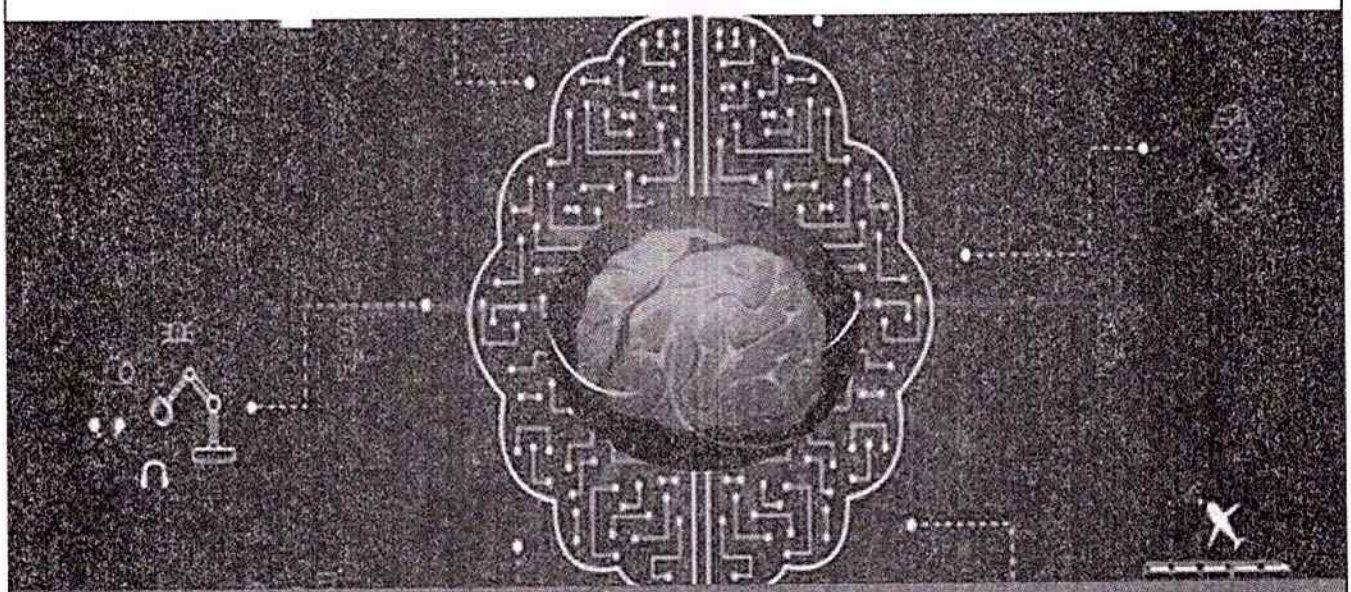

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8	Bitcoin Price Prediction -Mrs R.Padmaja,K.V.D Hanisha, B Amulya, M Harika	35-38
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11	Children Speech Recognition Using Machine Learning Methodologies - Dr.T.V.Sai Krishna, R Venkat	55-60

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13	Convolutional Lstm Model For Sentiment Analysis On Social Big Data - Raghuveer Pachipulusu.V.Ananth Reddy. R.Sai Kiran. T.Vignesh	66-72
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15	Design And Experimental Study Of Automatic Colour Sorting By A Robotic Arm System - T.Lakshmibai	79-82
16	Detection Of Autism Disorder Based On Eeg Signal Using Deep Learning Methods -Ranjani M.P.Supraja	83-87
17	Detection Of Online Public Shaming With Offensive Content On Twitter. - Gutta Sai Durga.Gopu Sandhya.Jonnalagadda Madhavi. Dr. S.V.N.Srinivasu	88-91
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19	Detection Of Social Network Mental Disorders Through Mining Of Online Social Media. - Battula Venkata Ananta Mehar Gopi.Rajarapu Venu Babu.Maddineni Naveen .Dr. S.V.N.Srinivasu	99-103
20	predections in healthy population through machine learning	104-108
21	Diabetics Prediction using Machine Learning Techniques. - Pathan Sajida. S.Amulya . V.Nandhini	109-114
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23	Door Security System Using Face Recognition -Dr A Srinivasa Rao.K.G.J.Prasanth. M. Rama Rao	121-123
24	ECG Classification With Convolutional Neural Networks - S V N Sreenivasu.T Bhargavika.B Anusha .P Jayasri	124-129
25	Emotion Recognition From Multimodal Data(Speech. Video. Text) Based On Deep Learning Techniques D.P.Supraja	130-137

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27	Eye Ball Cursor Movement Using Opencv - B.Preethi.D.Bharadwaja.B.Preethi. K.Charithra Lavanya.N.Sony	143-147
28	Face.Age And Gender Recogntion System Based on Deep Neural Networks - Gudapati Syam Prasad.K.Narendra Babu.N.Hemanth Kumar.K.Sriniivas	148-154
29	Facial Expression Recognition With Convolutional Neural Networks - S. Siva Nageswara Rao.S.Ramya. T.Anantha Lavanya	155-162
30	Fake Currency Detection. - Mr.Sk.K.M.Basha , Yalagala Hema Latha. Gatakala Venkata Sravya Bhavani. Macharla Maitili	163-167
31	Fake News Detection - Gangasani Likitha. I. Navya Sri. D. Swetha	168-175
32	Fake News Detection Using Machine Learning - Srikanth Mylapalli.Mylapalli Ramesh	176-180
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34	Functioning Of Artificial Intelligence In An Self-Driving Vehicle - A Review -Penugonda Surya Teja.None	186-189
35	Generic Recommendation Engine Using Hybrid Filtering Model - G Prabhakara Reddy,O Ramesh. Ch Anil	190-200
36	Head Motion Detection - Dr A Srinivasa Rao.M.Prathyusha. Y.Rajeswari	201-203
37	Heart Disease Prediction Using Machine Learning - Jhansi Lakshmi Manukonda ,R. V. P. S. Rekha. T. Divya. G. L. N. Jayaprada	204-208
38	House Price Prediction - Bodlapati Sowmya Reddy.M. Yamini Priya. P. Manasa	209-213
39	Image Captioning Using Deep Learning - Y E V Pratap Kumar Kuchi.M.Sireesha. G. Sai Akhil. K. Hema Sai Mourya Gupta	214-219

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41	Implementation Of Video Steganography Cryptography System For Iot-Based Cloud Computing Security. - Samvarapu Sagar Reddy,Mallavarapu Nikhil,Chevala Venkatesh,Dr. S.V.N Srinivasu	224-228
42	Inform Me-Family Gps Locator - Oruganti Ramesh,G Prabhakara Reddy. Ch. Anil	229-233
43	Ipl Score Prediction Using Machine Learning Methods - Rajyalakshmi Dondapati,N.Likitha,M.Anmisha	234-241
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45	Loan Prediction System - Divya Gopavarapu,K.Manasa,A.Akhila,M.Sireesha	250-255
46	Lung Cancer Prediction - Naga Mallika Gude,M. Navya Sri, B. Sukanya	256-263
47	Map Reduced Segmentation Clustering For Big Data Analytics Using Extended K-Mean Clustering Technique - Mvs.Prasad	264-270
48	Mask R-Cnn For Fire Detection - Razeena Begum Shaik,S Yogananda Datta . M S V Manoj	271-276
49	Melanoma Prediction Using Deep Learning - Aishwarya Nallapati,D. Jaya Tejaswini, J. Prashanthi, T. Siri Chandana	277-280
50	Multilevel Hierarchy Based Privacy Preserved Profile Publishing In Cloud Environment. - Esthala Abhishek,Kambhampati Adinarayana,Battula Ramesh,G. Sambasiva Rao	281-286
51	Music Recommendation Application Based On Facial Expressions - Ms Mohammad Arsha Sultana,Abdul Saherabegum, Akhila Umma, Guthula Jayasri Sai Nikitha	287-290
52	Mutual Fund Prediction Using Machine Learning - Shaik Nannu Saidavali,N.Vinay Chandra Pal, K.Bhaskar Reddy	291-295
53	Network Coding Techniques To Store The Data Securely In Cloud. - Guru Brahmam Madala, Vijay Anand R	296-301
54	Network Spam And Fake User Detection In Online Social Networks Using Support Vector Machine. - Majeti Pavan Kalyan,Anchula Sreekanth,Ravi Mahesh Babu,G. Sambasiva Rao	302-307
55	Next Word Prediction Using Recurrent Neural Networks - Srikanth Kolisetty,B. Venkateswarlu, S. Siva Sai Kumar, T. Uday Kumar	308-313

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Principal
NARASARAOPETA ENGINEERING
(AUTONOMOUS)
NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

56	Nobel Methodologies For Immigration Of Service Oriented Architecture Based Applications To Microservice Architecture - M Madhu Sudhan, P Indupriyankaray, Aelluri Lakshmi, M Sreenandan Reddy	314-317
57	Plant Leaf Disease Detection System Using Resnet-50 - Chappa.Ramya Sai,K.Kavya,K.Meghana,A.Tulasi	318-321
58	Predicting The Survival Of Patients With Heart Failure-Machine Learning Methods - Hemalatha Tatiparthi,G.Mounika.K.Prasanthi,G.Hemavani	322-329
59	Prediction Of Agriculture Yields Using Machine Learning Algorithms. - Katepalli Sai Sravanthi,Grandhisila Venkatanagalakshmipravallika,Kollipara Harika ,M. Mamatha	330-335
60	Prediction Of Covid 19 Epidemics Using Data Analytics - S.Anil Kumar,G.Sathar	336-343
61	Prediction Of Covid Readmissions Using Machine Learning - Athukuri Lakshmi Narendra Kumar,B.V.V.N.Sai Kumar	344-347
62	Rainfall Prediction Using Machine Learning - Anusha Bhavanam,Ch. Vyshnavi, Ch.Priyanka	348-353
63	Review On Load Balancing Using Cloud Computing - J Raghunath ,A Chandra Sekhar, Shaik Razia, D Venkatesh	354-362
64	Road Safety And Vehicle Accident Prevention - G.Gayatri,G.Gayatri,K.Sugunitha	363-367
65	Sensile Soil Analyzing Application - Mathi Raasi,G.Santhi Sri,M Sravya,Shaik Khaja Mohiddin Basha	368-373
66	Sentiment Analysis Of Movie Reviews Using Ml -Mukunda Gagula,Lakshma Reddy,Sai Venkatesh,Shaik Rafi	374-377
67	Supevised Learning Models for perception of Multi-Trafic Scene	378-383
68	Smart Parking System Using Web Application, - K Razeena Begum, S Anand, K Vivek, K Manideep	384-387

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Guntur (Dist.), A.P.

69	Social Distance Monitoring Using Deep Learning - Satuluri Vijaya Lakshmi.K.K.N. Bhuvaneswari, B.Vijaya Lakshmi	388-398
70	Stock Value Prediction Using Regression - B.Jhansi Vazram, G.Venkatrao, D.Srtinivasa Reddy, V.Ashok Kumar	399-404
71	Summarized Reviews With Attention Mechanism Using Lstm - Tahfeem Shaik,Sirajuddin,Shaikrafi	405-408
72	Supervised Learning For Fraud And Malware Detection From Android Applications. - Tunuguntla Bala Bhaskar Rao ,Dronadula Narendra, Maddu Phanindra Kumar,Dr. S.V.N.Srinivasu	409-415
73	Trust-Based Privacy Preserving Photo Sharing In Online Social Networks - Mrs R.Padmaja,Sk.Shahnoor, N.Nikhila, L.Thanusha	416-419
74	Useableness And Applications Of Blockchain Technology In Cloud Computing Environment - D Venkatesh,M Vijaya Bhaskar, J Raghunath, D Raghava Raju	420-426
75	Weather Prediction - Kotha Tharun Teja,G.Ashok,K.Raviteja,N.Raviteja	427-431
76	Wholesale And Retail Store Management System - Mr K Siva Rama Krishna,Saranya Bala,Y .Triveni,V . Sai Divya	432-435

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INFORM ME-FAMILY GPS LOCATOR

1. O Ramesh**,ramesh[illegible]@gmail.com MLR Institute of Technology,

2. G Prabhakara Reddy*,gpreddy.mlrit@gmail.com, MLR Institute of Technology,

3.Ch Anil ***,chintalapudianil5@gmail.com,Narasaraopet Engineering College.

Department of Computer Science and Engineering

Abstract : Individuals using smart phones have grown rapidly in this day and age, and as a result, it can be used skillfully for individual security or other purposes of safety. Many successive traumatic events that shake the nation as a whole have prompted us to go for the issues of their health. More number of new apps had created to provide security to citizens by means of their phones. Typically an Android application for the security of people as men and adolescents to protect themselves when they are in danger by setting a few strategy through the application.

I. INTRODUCTION

Inform me is an Android application for the security of people just as men and youngsters to discover them when they are in peril by setting some example through the application.

PDAs have changed the way where we live our lives, anyway one of the routinely disregarded ways that phones have changed life as we most likely and wireless development has completely adjusted the way wherein we live our step by step plan.

1) Encoding flexibility:

Some phones will have various size of introductions, changed hardware's, and a couple of codes. Customary courses of action would get a few encoding framework before the appearance of a video program. Regardless, the most liberal substance providers would not have the choice to go to each possible compact stage. Social TV decreases streams for some electronic gadgets at progressing, by exhausting the endeavors to an Infrastructure fogs organization. In particular, we Novell use a surrogate for each customer, which is having an item in the Infrastructure cloud as an assistance. It isolates the tape to help the customer and changes over into the perfect skill, while considering express structure of the gadget.

2) Battery efficiency:

A disappointment overview directed by Robert show the system segments having Wi-Fi and 3G. Give to significant part allover electric force in a savvy device, commanding utilization from other hardware apparatuses including memory. focus at power sparing discharging from web segment telephone of required information correspondence system structure.

II. LITERATURE SURVEY

With involved life and long to endeavor plans, managing the ordinarily for our family can require like a throughout the day work. Most engineers have thought of inventive programming in view of similar issues. VithU app which is used to convey the messages to the people who are registered with in the application contacts and thus it alerts every member in the application who are registered and also some apps can share the live location but it disappears after certain time and also any of the existing apps does not show the battery level perecentage.

EXISTING SYSTEM AND DRAWBACKS

Generally we use WhatsApp mobile app to chat with people, send and receive videos, images and also transactions but we can also share the live location to a particular person or to a WhatsApp group so that they come to know about our exact location but in this application the live location lasts for only a certain period and it disappears and also it has some location limitation and not only WhatsApp we several applications which can give constant updates from people through messaging apps and there is no need of emergency help but in this case they the is in and also they the original person is communicating them and also the WhatsApp live location works only if the mobile carrier network is available only and the should be turned on and it lasts only for some amount of

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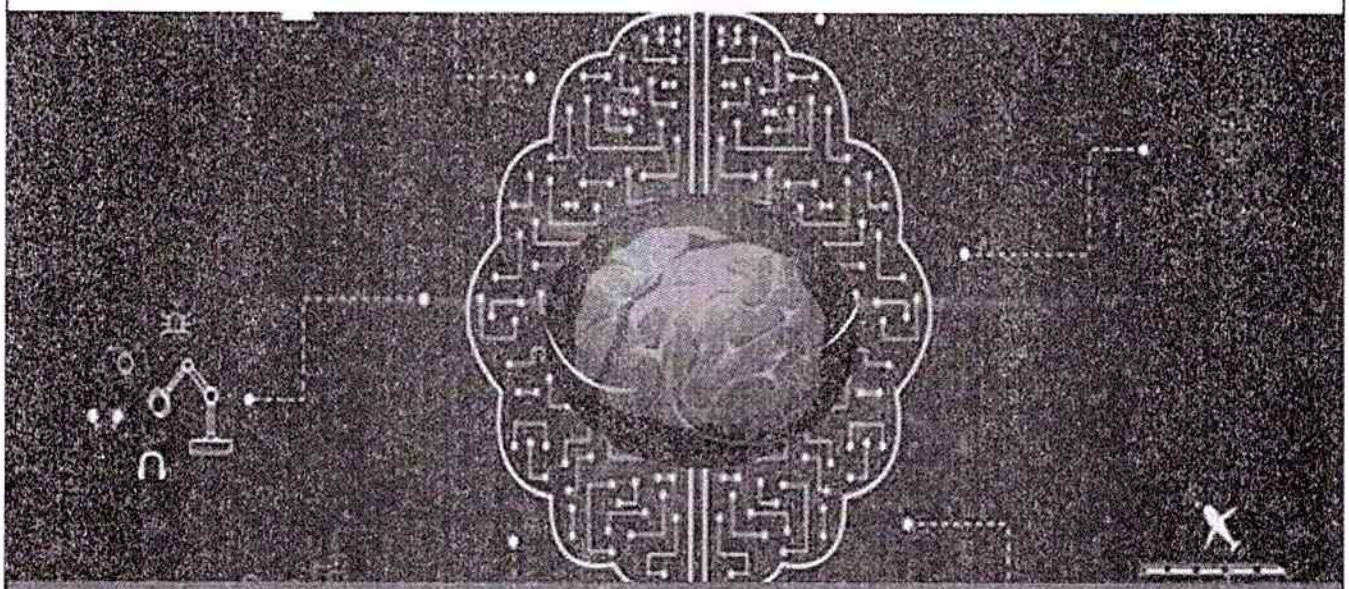

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-

REF. NO	TITLE OF THE PAPER AND AUTHOR(S)	Page No.
	Artificial Intelligence and Its Emerging Areas -NEC-ICAIIA 2K21	
1.	A Data Mining Based Model For Detection Of Deceitful Behaviour In Water Consumption - Tejasri Choudi,B.V.Satish, V.Naga Jyothi, K.Navya	1-5
2	A Machine Learning Framework For Prediction Of Heart Disease. Ramasetty Ramu,Kota Jagadeesh,Chanti Rajamohan Reddy,V. Mahesh Babu	6-10
3	A Supervised Learning Algorithm For Credit Card Fraud Detection. - Guggilam Sai Sri, Gummadilli Gouthami, Potluri Srividya, M. Mamatha	11-15
4	Amazon Product Review Sentiment Analysis Using Machine Learning - Ms Mohammad Arsha Sultana,P. Rakesh, M. Sandeep, G. Jagadeesh	16-20
5	An Interactive Study Of Thyroid Disease Prediction Using Machine Learning - D. Lokesh Gupta, D.Lokesh Gupta, K.V.Narasimha Reddy, D.Ramesh, V.Veerendra	21-25
6	Autoregressive Integrated Moving Average Model For Prediction Of Crypto Currency. - Pokuri Jaya Venkata Naga Sudhakar,Alladi Anil,Avula Venkata Rami Reddy,V. Mahesh Babu	26--29
7	Biometric Identification Scheme With Efficient Privacy-Preserving Mechanism For Cloud Computing Service, - Shaik Ruksana,Bandaru Naga Siva Saisuryatejaswi,Yadavalli Yedukondalu,M. Mamatha	30-34
8	Bitcoin Price Prediction -Mrs R.Padmaja,K.V.D Hanisha, B Amulya, M Harika	35-38
9	Calories Burned Prediction, - Niharika Motupalli, B.Siva Kanaka Raju Shaik Mehataj , U. Jhansi Rani, T .Bhavani	39-45
10	Cartoonize Image Using Deep Learning - Gouse Mastan Vali,D.Vamsi Krishna, A.Sairam,K.S.Lakshmi Narayana	46-54
11	Children Speech Recognition Using Machine Learning Methodologies - Dr.T.V.Sai Krishna, R Venkat	55-60

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12	Clarification Of Webbing Through Cloud Computing Technologies - Amara.S.A.L.G.Gopala Gupta,Dr. Gudapati Syam Prasad	61-65
13	Convolutional Lstm Model For Sentiment Analysis On Social Big Data - Raghuveer Pachipulusu,V.Ananth Reddy, R.Sai Kiran, T.Vignesh	66-72
14	Data Preprocessing For Efficient Prediction In Customer Relationship Management, - Patur Ganga, K.Arun	73-78
15	Design And Experimental Study Of Automatic Colour Sorting By A Robotic Arm System - T.Lakshmibai	79-82
16	Detection Of Autism Disorder Based On Eeg Signal Using Deep Learning Methods -Ranjani M.P.Supraja	83-87
17	Detection Of Online Public Shaming With Offensive Content On Twitter, - Gutta Sai Durga,Gopu Sandhya,Jonnalagadda Madhavi, Dr. S.V.N.Srinivasu	88-91
18	Detection Of Phishing Attacks Using Natural Language Processing And Logistic Regression Model, - Surubula Thirupathi Rao,Pothukuchi Mahesh Babu,Rayala Venu,V. Mahesh Babu	92-98
19	Detection Of Social Network Mental Disorders Through Mining Of Online Social Media, - Battula Venkata Ananta Mehar Gopi,Rajarapu Venu Babu,Maddineni Naveen ,Dr. S.V.N.Srinivasu	99-103
20	predections in healthy population through machine learning	104-108
21	Diabetics Prediction using Machine Learning Techniques, - Pathan Sajida, S.Amulya , V.Nandhini	109-114
22	DL-CNN Framework For Malicious Social Bots Detection, - Syed Fathima,Ponnapati Mallika,Gandru Akhilendra Chowdary,M. Mamatha	115-120
23	Door Security System Using Face Recognition -Dr A Srinivasa Rao,K.G.J.Prasanth, M. Rama Rao	121-123
24	ECG Classification With Convolutional Neural Networks - S V N Sreenivasu,T Bhargavika,B Anusha ,P Jayasri	124-129
25	Emotion Recognition From Multimodal Data(Speech, Video, Text) Based On Deep Learning Techniques D.P.Supraja	130-137

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NARASARAOPETA ENGINEERING COLLEGE
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NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

26	Estimation Of Population Analysis - Tarun.G.Tarun.T.Purnavamsi.K.Vivekreddy	138-142
27	Eye Ball Cursor Movement Using Opencv - B.Preethi.D.Bharadwaja.B.Preethi. K.Charithra Lavanya.N.Sony	143-147
28	Face.Age And Gender Recogntion System Based on Deep Neural Networks - Gudapati Syam Prasad.K.Narendra Babu.N.Hemanth Kumar.K.Sriniivas	148-154
29	Facial Expression Recognition With Convolutional Neural Networks - S. Siva Nageswara Rao.S.Ramya. T.Anantha Lavanya	155-162
30	Fake Currency Detection. - Mr.Sk.K.M.Basha , Yalagala Hema Latha. Gatakala Venkata Sravya Bhavani. Macharla Maitili	163-167
31	Fake News Detection - Gangasani Likitha. I. Navya Sri. D. Swetha	168-175
32	Fake News Detection Using Machine Learning - Srikanth Mylapalli.Mylapalli Ramesh	176-180
33	Forest Fires Detection Using Machine Learning Algorithms - N.S.Sesi Kiran.P. Lakshmi Narayana. Sk. Mastanvali. P. Nivas	181-185
34	Functioning Of Artificial Intelligence In An Self-Driving Vehicle - A Review -Penugonda Surya Teja.None	186-189
35	Generic Recommendation Engine Using Hybrid Filtering Model - G Prabhakara Reddy,O Ramesh. Ch Anil	190-200
36	Head Motion Detection - Dr A Srinivasa Rao.M.Prathyusha. Y.Rajeswari	201-203
37	Heart Disease Prediction Using Machine Learning - Jhansi Lakshmi Manukonda ,R. V. P. S. Rekha. T. Divya. G. L. N. Jayaprada	204-208
38	House Price Prediction - Bodlapati Sowmya Reddy.M. Yamini Priya. P. Manasa	209-213
39	Image Captioning Using Deep Learning - Y E V Pratap Kumar Kuchi.M.Sireesha. G. Sai Akhil. K. Hema Sai Mourya Gupta	214-219

IQAC

Principal
NARASARAOPETA ENGINEERING COLLEGE
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NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

40	Image Classification Using Object Detection With YOLO Algorithm. Shaik Bhadhar Shareef.Putchakayala Ramesh..Angajala Anil.G. Sambasiva Rao	220-223
41	Implementation Of Video Steganography Cryptography System For Iot-Based Cloud Computing Security. - Sanivarapu Sagar Reddy.Mallavarapu Nikhil.Chevala Venkatesh.Dr. S.V.N.Srinivasu	224-228
42	Inform Me-Family Gps Locator - Oruganti Ramesh.G Prabhakara Reddy. Ch. Anil	229-233
43	Ipl Score Prediction Using Machine Learning Methods - Rajyalakshmi Dondapati.N.Likitha.M.Anmisha	234-241
44	Liver Disease Prediction Using Machine Learning Methods - Sravana Sandhya Rani Karnati.K. Sravana Sandhya Rani, B.V.Gayithri,K.Vijayalakshmi	242-249
45	Loan Prediction System - Divya Gopavarapu.K.Manasa.A.Akhila.M.Sireesha	250-255
46	Lung Cancer Prediction - Naga Mallika Gude.M. Navya Sri, B. Sukanya	256-263
47	Map Reduced Segmentation Clustering For Big Data Analytics Using Extended K-Mean Clustering Technique - Mvs.Prasad	264-270
48	Mask R-Cnn For Fire Detection - Razeena Begum Shaik.S Yogananda Datta . M S V Manoj	271-276
49	Melanoma Prediction Using Deep Learning - Aishwarya Nallapati.D. Jaya Tejaswini. J. Prashanthi. T. Siri Chandana	277-280
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51	Music Recommendation Application Based On Facial Expressions - Ms Mohammad Arsha Sultana,Abdul Saherabegum, Akhila Umma, Guthula Jayasri Sai Nikitha	287-290
52	Mutual Fund Prediction Using Machine Learning - Shaik Nannu Saidavali.N.Vinay Chandra Pal, K.Bhaskar Reddy	291-295
53	Network Coding Techniques To Store The Data Securely In Cloud. - Guru Brahmam Madala, Vijay Anand R	296-301
54	Network Spam And Fake User Detection In Online Social Networks Using Support Vector Machine. - Majeti Pavan Kalyan.Anchula Sreekanth.Ravi Mahesh Babu.G. Sambasiva Rao	302-307
55	Next Word Prediction Using Recurrent Neural Networks - Srikanth Kolisetty.B. Venkateswarlu, S. Siva Sai Kumar, T. Uday Kumar	308-313

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56	Nobel Methodologies For Immigration Of Service Oriented Architecture Based Applications To Microservice Architecture - M Madhu Sudhan, P Indupriyankaray, Aelluri Lakshmi, M Sreenandan Reddy	314-317.
57	Plant Leaf Disease Detection System Using Resnet-50 - Chappa.Ramya Sai,K.Kavya,K.Meghana,A.Tulasi	318-321
58	Predicting The Survival Of Patients With Heart Failure-Machine Learning Methods - Hemalatha Tatiparthi,G.Mounika,K.Prasanthi,G.Hemavani	322-329
59	Prediction Of Agriculture Yields Using Machine Learning Algorithms. - Katepalli Sai Sravanthi,Grandhisila Venkatanagalakshmipravallika,Kollipara Harika ,M. Mamatha	330-335
60	Prediction Of Covid 19 Epidemics Using Data Analytics - S.Anil Kumar,G.Sathar	336-343
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62	Rainfall Prediction Using Machine Learning - Anusha Bhavanam,Ch. Vyshnavi, Ch.Priyanka	348-353
63	Review On Load Balancing Using Cloud Computing - J Raghunath ,A Chandra Sekhar, Shaik Razia, D Venkatesh	354-362
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66	Sentiment Analysis Of Movie Reviews Using Ml -Mukunda Gagula,Lakshma Reddy,Sai Venkatesh,Shaik Rafi	374-377
67	Supevised Learning Models for perception of Multi-Trafic Scene	378-383
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73	Trust-Based Privacy Preserving Photo Sharing In Online Social Networks - Mrs R.Padmaja.Sk.Shahnoor. N.Nikhila. L.Thanusha	416-419
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75	Weather Prediction - Kotha Tharun Teja.G.Ashok.K.Raviteja.N.Raviteja	427-431
76	Wholesale And Retail Store Management System - Mr K Siva Rama Krishna.Saranya Bala.Y .Triveni.V . Sai Divya	432-435

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Weather Prediction Using Machine learning

Mr.U.VijayKumar.MTech.

Professor, Narasaraopeta Engineering College,Narasaraopet,India

K Tharun Teja(kotha.tharunteja@gmail.com)

G Ashok(gottipatiashok545@gmail.com)

K. Ravi Teja(kalangiraviteja@gmail.com)

N. Ravi Teja(nalliboyinaraviteja@gmail.com)

Abstract

India has a typical weather conditions consisting of various seasons and geographical conditions.Country has extreme high temperatures, cold climate and heavy rainfall at . These extreme variations in temperatures make us to feel difficult in inferring / predictions of weather effectively. It requires higher scientific techniques / methods like machine learning algorithms applications for effective study and predictions of weather conditions. In this paper, we applied K-Means and Decision Tree Regressor algorithm

1. Introduction

Machine learning is one of the applications of artificial intelligence (AI) that provides computers, the ability to learn automatically and improve from experience instead of explicitly programmed. It focuses on developing computer programs that can access data and use it to learn from themselves[3]. The main aim is to allow computers to learn automatically without human intervention and also adjust actions accordingly. We have developed a system using data mining which has the ability to predict the temperature Farming is the background of the economy; every person requires food for their survivalOur intention through this project is to guide the farmers in choosing a crop[1,2,3,4] for cultivation that has the most productive yield thereby being beneficial to us

2. Literature Review

Data mining is seen as an increasingly important tool by modern business to transform data into business intelligence giving an informational advantageIf there is much irrelevant and redundant information present or noisy and unreliable data, then knowledge discovery during the training phase is more difficult.

Data preparation and filtering steps can take considerable amount of processing time. Data preprocessing includes cleaning, normalization, transformation, feature extraction and selection, etc. The product of data pre-processing is the final training set

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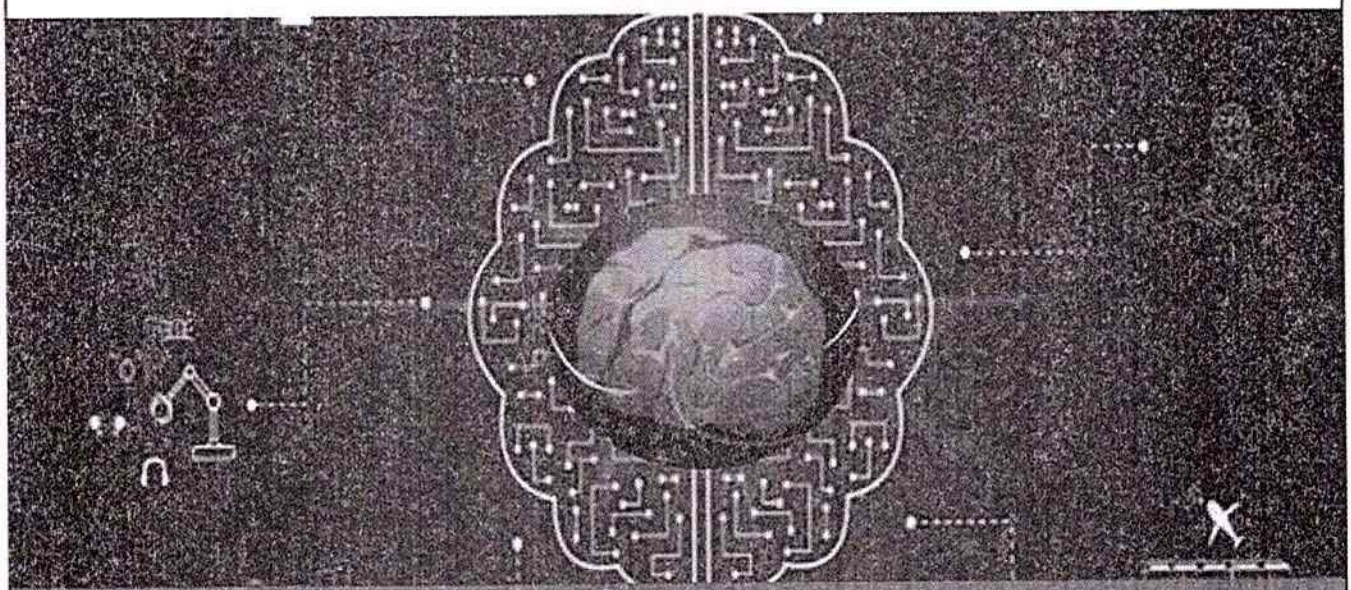

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-

REF. NO	TITLE OF THE PAPER AND AUTHOR(S)	Page No.
	Artificial Intelligence and Its Emerging Areas -NEC-ICAIIA 2K21	
1.	A Data Mining Based Model For Detection Of Deceitful Behaviour In Water Consumption - Tejasri Choudi,B.V.Satish, V.Naga Jyothi, K.Navya	1-5
2	A Machine Learning Framework For Prediction Of Heart Disease. Ramasetty Ramu,Kota Jagadeesh,Chanti Rajamohan Reddy,V. Mahesh Babu	6-10
3	A Supervised Learning Algorithm For Credit Card Fraud Detection. - Guggilam Sai Sri, Gummadilli Gouthami, Potluri Srividya, M. Mamatha	11-15
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6	Autoregressive Integrated Moving Average Model For Prediction Of Crypto Currency. - Pokuri Jaya Venkata Naga Sudhakar,Alladi Anil,Avula Venkata Rami Reddy,V. Mahesh Babu	26--29
7	Biometric Identification Scheme With Efficient Privacy-Preserving Mechanism For Cloud Computing Service. - Shaik Ruksana,Bandaru Naga Siva Saisuryatejaswi,Yadavalli Yedukondalu,M Mamatha	30-34
8	Bitcoin Price Prediction -Mrs R.Padmaja,K.V.D Hanisha, B Amulya, M Harika	35-38
9	Calories Burned Prediction. - Niharika Motupalli, B.Siva Kanaka Raju Shaik Mehataj , U. Jhansi Rani, T .Bhavani	39-45
10	Cartoonize Image Using Deep Learning - Gouse Mastan Vali,D.Vamsi Krishna, A.Sairam,K.S.Lakshmi Narayana	46-54
11	Children Speech Recognition Using Machine Learning Methodologies - Dr.T.V.Sai Krishna, R Venkat	55-60

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12	Clarification Of Webbing Through Cloud Computing Technologies - Amara.S.A.L.G.Gopala Gupta.Dr. Gudapati Syam Prasad	61-65
13	Convolutional Lstm Model For Sentiment Analysis On Social Big Data - Raghuveer Pachipulusu.V.Ananth Reddy. R.Sai Kiran. T.Vignesh	66-72
14	Data Preprocessing For Efficient Prediction In Customer Relationship Management. - Patur Ganga. K.Arun	73-78
15	Design And Experimental Study Of Automatic Colour Sorting By A Robotic Arm System - T.Lakshmibai	79-82
16	Detection Of Autism Disorder Based On Eeg Signal Using Deep Learning Methods -Ranjani M.P.Supraja	83-87
17	Detection Of Online Public Shaming With Offensive Content On Twitter. - Gutta Sai Durga.Gopu Sandhya.Jonnalagadda Madhavi. Dr. S.V.N.Srinivasu	88-91
18	Detection Of Phishing Attacks Using Natural Language Processing And Logistic Regression Model. - Surubula Thirupathi Rao.Pothukuchi Mahesh Babu.Rayala Venu.V. Mahesh Babu	92-98
19	Detection Of Social Network Mental Disorders Through Mining Of Online Social Media. - Battula Venkata Ananta Mehar Gopi.Rajarapu Venu Babu.Maddineni Naveen .Dr. S.V.N.Srinivasu	99-103
20	predections in healthy population through machine learning	104-108
21	Diabetics Prediction using Machine Learning Techniques. - Pathan Sajida. S.Amulya , V.Nandhini	109-114
22	DL-CNN Framework For Malicious Social Bots Detection. - Syed Fathima.Ponnapati Mallika.Gandru Akhilendra Chowdary.M. Mamatha	115-120
23	Door Security System Using Face Recognition -Dr A Srinivasa Rao.K.G.J.Prasanth. M. Rama Rao	121-123
24	ECG Classification With Convolutional Neural Networks - S V N Sreenivasu.T Bhargavika,B Anusha ,P Jayasri	124-129
25	Emotion Recognition From Multimodal Data(Speech. Video. Text) Based On Deep Learning Techniques - D.P.Supraja	130-137

IQAC

Principal
NARASARAOPETA ENGINEERING COLLEGE
(AUTONOMOUS)
NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

26	Estimation Of Population Analysis - Tarun.G.Tarun.T.Purnavamsi.K.Vivekreddy	138-142
27	Eye Ball Cursor Movement Using Opencv - B.Preethi.D.Bharadwaja.B.Preethi. K.Charithra Lavanya.N.Sony	143-147
28	Face.Age And Gender Recogntion System Based on Deep Neural Networks - Gudapati Syam Prasad.K.Narendra Babu.N.Hemanth Kumar.K.Sriniivas	148-154
29	Facial Expression Recognition With Convolutional Neural Networks - S. Siva Nageswara Rao.S.Ramya. T.Anantha Lavanya	155-162
30	Fake Currency Detection. - Mr.Sk.K.M.Basha , Yalagala Hema Latha. Gatakala Venkata Sravya Bhavani. Macharla Maitili	163-167
31	Fake News Detection - Gangasani Likitha. I. Navya Sri. D. Swetha	168-175
32	Fake News Detection Using Machine Learning - Srikanth Mylapalli.Mylapalli Ramesh	176-180
33	Forest Fires Detection Using Machine Learning Algorithms - N.S.Sesi Kiran.P. Lakshmi Narayana, Sk. Mastanvali, P. Nivas	181-185
34	Functioning Of Artificial Intelligence In An Self-Driving Vehicle - A Review -Penugonda Surya Teja.None	186-189
35	Generic Recommendation Engine Using Hybrid Filtering Model - G Prabhakara Reddy.O Ramesh, Ch Anil	190-200
36	Head Motion Detection - Dr A Srinivasa Rao.M.Prathyusha, Y.Rajeswari	201-203
37	Heart Disease Prediction Using Machine Learning - Jhansi Lakshmi Manukonda ,R. V. P. S. Rekha, T. Divya. G. L. N. Jayaprada	204-208
38	House Price Prediction - Bodlapati Sowmya Reddy.M. Yamini Priya. P. Manasa	209-213
39	Image Captioning Using Deep Learning - Y E V Pratap Kumar Kuchi.M.Sireesha, G. Sai Akhil, K. Hema Sai Mourya Gupta	214-219

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Principal
NARASARAOPETA ENGINEERING COLLEGE
(AUTONOMOUS)
NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

40	Image Classification Using Object Detection With YOLO Algorithm. Shaik Bhadhar Shareef.Putchakayala Ramesh.Angajala Anil.G. Sambasiva Rao	220-223
41	Implementation Of Video Steganography Cryptography System For Iot-Based Cloud Computing Security. - Sanivarapu Sagar Reddy.Mallavarapu Nikhil.Chevala Venkatesh.Dr. S.V.N Srinivasu	224-228
42	Inform Me-Family Gps Locator - Oruganti Ramesh.G Prabhakara Reddy. Ch. Anil	229-233
43	Ipl Score Prediction Using Machine Learning Methods - Rajyalakshmi Dondapati.N.Likitha.M.Anmisha	234-241
44	Liver Disease Prediction Using Machine Learning Methods - Sravana Sandhya Rani Karnati.K. Sravana Sandhya Rani, B.V.Gayithri.K.Vijayalakshmi	242-249
45	Loan Prediction System - Divya Gopavarapu.K.Manasa.A.Akhila.M.Sireesha	250-255
46	Lung Cancer Prediction - Naga Mallika Gude.M. Navya Sri. B. Sukanya	256-263
47	Map Reduced Segmentation Clustering For Big Data Analytics Using Extended K-Mean Clustering Technique - Mvs.Prasad	264-270
48	Mask R-Cnn For Fire Detection - Razeena Begum Shaik.S Yogananda Datta , M S V Manoj	271-276
49	Melanoma Prediction Using Deep Learning - Aishwarya Nallapati.D. Jaya Tejaswini. J. Prashanthi. T. Siri Chandana	277-280
50	Multilevel Hierarchy Based Privacy Preserved Profile Publishing In Cloud Environment. - Esthala Abhishek.Kambhampati Adinarayana.Battula Ramesh.G. Sambasiva Rao	281-286
51	Music Recommendation Application Based On Facial Expressions - Ms Mohammad Arsha Sultana.Abdul Saherabegum, Akhila Umma, Guthula Jayasri Sai Nikitha	287-290
52	Mutual Fund Prediction Using Machine Learning - Shaik Nannu Saidavali.N.Vinay Chandra Pal, K.Bhaskar Reddy	291-295
53	Network Coding Techniques To Store The Data Securely In Cloud. - Guru Brahmam Madala, Vijay Anand R	296-301
54	Network Spam And Fake User Detection In Online Social Networks Using Support Vector Machine. - Majeti Pavan Kalyan.Anchula Sreekanth.Ravi Mahesh Babu.G. Sambasiva Rao	302-307
55	Next Word Prediction Using Recurrent Neural Networks - Srikanth Kolisetty.B. Venkateswarlu, S. Siva Sai Kumar, T. Uday Kumar	308-313

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56	Nobel Methodologies For Immigration Of Service Oriented Architecture Based Applications To Microservice Architecture - M Madhu Sudhan, P Indupriyankaray, Aelluri Lakshmi, M Sreenandan Reddy	314-317
57	Plant Leaf Disease Detection System Using Resnet-50 - Chappa.Ramya Sai.K.Kavya.K.Meghana.A.Tulasi	318-321
58	Predicting The Survival Of Patients With Heart Failure-Machine Learning Methods - Hemalatha Tatiparthi,G.Mounika.K.Prasanthi.G.Hemavani	322-329
59	Prediction Of Agriculture Yields Using Machine Learning Algorithms. - Katepalli Sai Sravanthi,Grandhisila Venkatanagalakshmipravallika,Kollipara Harika ,M. Mamatha	330-335
60	Prediction Of Covid 19 Epidemics Using Data Analytics - S.Anil Kumar.G.Sathar	336-343
61	Prediction Of Covid Readmissions Using Machine Learning - Athukuri Lakshmi Narendra Kumar.B.V.V.N.Sai Kumar	344-347
62	Rainfall Prediction Using Machine Learning - Anusha Bhavanam.Ch. Vyshnavi, Ch.Priyanka	348-353
63	Review On Load Balancing Using Cloud Computing - J Raghunath ,A Chandra Sekhar, Shaik Razia, D Venkatesh	354-362
64	Road Safety And Vehicle Accident Prevention - G.Gayatri.G.Gayatri.K.Sugunitha	363-367
65	Sensile Soil Analyzing Application - Mathi Raasi.G.Santhi Sri.M Sravya.Shaik Khaja Mohiddin Basha	368-373
66	Sentiment Analysis Of Movie Reviews Using Ml -Mukunda Gagula.Lakshma Reddy.Sai Venkatesh.Shaik Rafi	374-377
67	Supevised Learning Models for perception of Multi-Trafic Scene	378-383
68	Smart Parking System Using Web Application, - K Razeena Begum, S Anand, K Vivek, K Manideep	384-387

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Guntur (Dist.), A.P.

69	Social Distance Monitoring Using Deep Learning - Satuluri Vijaya Lakshmi.K.K.N. Bhuvaneswari, B.Vijaya Lakshmi	388-398
70	Stock Value Prediction Using Regression - B.Jhansi Vazram, G.Venkatrao, D.Srtinivasa Reddy, V.Ashok Kumar	399-404
71	Summarized Reviews With Attention Mechanism Using Lstm - Tahfeem Shaik,Sirajuddin,Shaikrafi	405-408
72	Supervised Learning For Fraud And Malware Detection From Android Applications. - Tunuguntla Bala Bhaskar Rao .Dronadula Narendra, Maddu Phanindra Kumar.Dr. S.V.N.Srinivasu	409-415
73	Trust-Based Privacy Preserving Photo Sharing In Online Social Networks - Mrs R.Padmaja,Sk.Shahnoor, N.Nikhila, L.Thanusha	416-419
74	Useableness And Applications Of Blockchain Technology In Cloud Computing Environment - D Venkatesh,M Vijaya Bhaskar, J Raghunath, D Raghava Raju	420-426
75	Weather Prediction - Kotha Tharun Teja,G.Ashok,K.Raviteja,N.Raviteja	427-431
76	Wholesale And Retail Store Management System - Mr K Siva Rama Krishna.Saranya Bala.Y .Triveni.V , Sai Divya	432-435

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CSE 204

Image Captioning Using Deep Learning

M.Sireesha[1,a] G. Sai Akhil[2,b] , Y E V Pratap Kumar Kuchi[3,c] ,K.H.S.Mourya Gupta[4,d]
[1,2,3]Student, Department of CSE, Narasaraopeta Engineering College. Narasaraopeta,Guntur(D.T)A.P, India
[4]Professor, Department of CSE, Narasaraopeta Engineering College. Narasaraopeta,Guntur(D.T)A.P, India
[1]moturisireesha@gmail.com [2]saiakhil.031@gmail.com [3] k.y.e.v.prathapkumar33@gmail.com
[4]mouryagupta9388@gmail.com

ABSTRACT

In Artificial Intelligence (AI), the contents of an image are generated accordingly which entails computer vision and NLP (Natural Language Processing). Image Captioning is the way of generating a textual description of an image. It uses both Natural Language Processing as well as Computer Vision and prescient to generate the captions. This model is employed to come up with natural sentences which eventually describe the image. This model consists of Convolutional Neural Network (CNN) as well as a Recurrent Neural Network (RNN). The CNN is employed for feature extraction from images and RNN is employed for sentence generation. The model is trained in such some way that if an input image is given to the model, it generates captions that almost describe the image. The dataset is going to be within the form of image → captions. The dataset consists of input images and their corresponding output captions and we are going to use the Ficker8k Dataset to train and test the model. We must also understand how important this problem in real-world contexts also prefer It can act as Aid for Blind, generating relevant captions for CCTV to raise the alarm and more. Finally, we must have familiarity with basic Deep Learning concepts like Convolution Neural Networks, Recurrent Neural Networks, Transfer Learning, Kera's Library, Python Syntax, Etc.

I. INTRODUCTION

Image caption generation has emerged as a challenging andcritical research area following the development in statistical language modelling and image recognition. The generation of captions from images has various practical benefits, starting from aiding the visually impaired, to enable the automated and cost-saving labelling of the innumerable of images uploaded to the web on daily basis. The field also brings together state-of-the-art models in Natural Language Processing and Computer Vision, two of the most important fields in Artificial Intelligence.

There are two main approaches to Image Captioning: bottom-up and top-down.

Bottom- up approaches, such as those by [1] [2] [3], generate items observed in an image, and so try to combine the objects identified into a caption. Top-down approaches, such as those by [4] [5] [6], attempt to generate a semantic representation of an image that is then transcribed into a caption using various architectures, such as recurrent neural networks. The latter approach follows within the footsteps of recent advances in statistical machine translation, and also the state-of-the-art models mostly adopt the top-down approach.

II. LITERATURE SURVEY

Our approach works successfully on the top-down image generation approach. We use a deep convolutional neural network to generate a vectorized representation of an image that we then feed into a Long-Short-Term Memory (LSTM) network, which then generates captions.

One of the main challenges in the field of Image Captioning is overfitting the training data. This is because the largest datasets, such as the Microsoft Common Objects in Context (MSCOCO) dataset, only have 160000 labelled examples, from which any top-down architecture must learn (a) a robust image representation, (b) a robust hidden-state LSTM based representation to capture image semantics and (c) language modelling for syntactically- sound oriented design for the unique purpose of caption generation

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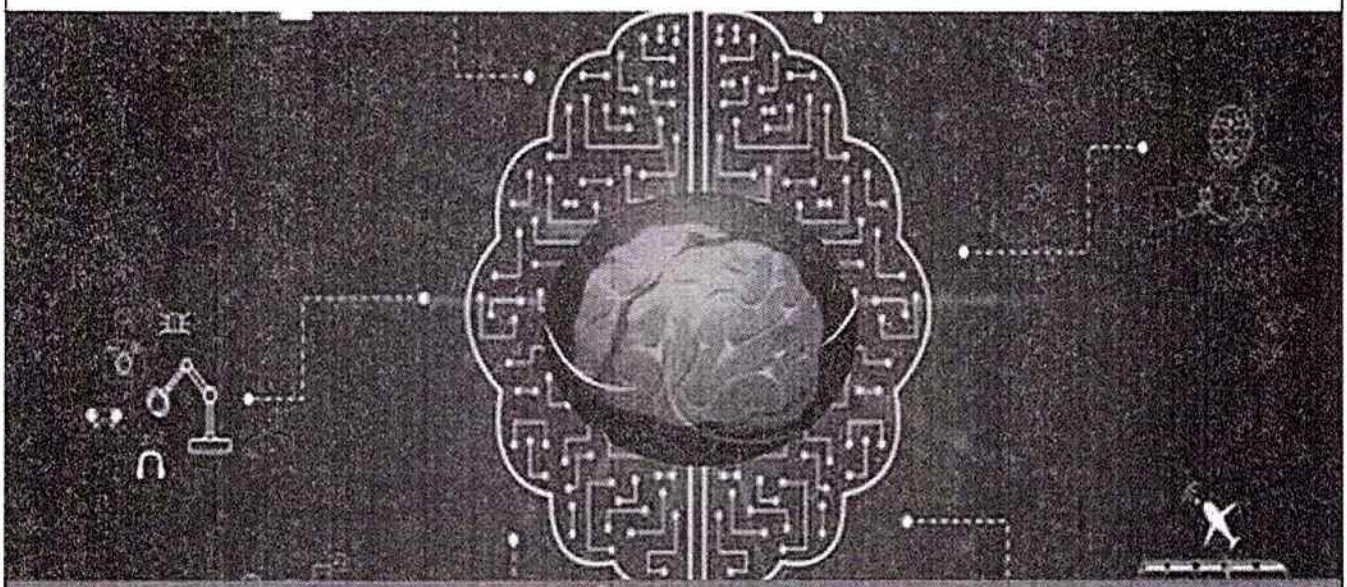

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LIST OF FULL LENGTH PAPERS SELECTED FOR PROCEEDINGS IN

International Conference On

Artificial Intelligence and Its Emerging Areas

-

REF. NO	TITLE OF THE PAPER AND AUTHOR(S)	Page No.
	Artificial Intelligence and Its Emerging Areas -NEC-ICAIIA 2K21	
1.	A Data Mining Based Model For Detection Of Deceitful Behaviour In Water Consumption - Tejasri Choudi,B.V.Satish, V.Naga Jyothi, K.Navya	1-5
2	A Machine Learning Framework For Prediction Of Heart Disease, Ramasetty Ramu,Kota Jagadeesh,Chanti Rajamohan Reddy,V. Mahesh Babu	6-10
3	A Supervised Learning Algorithm For Credit Card Fraud Detection, - Guggilam Sai Sri, Gummadilli Gouthami, Potluri Srividya, M. Mamatha	11-15
4	Amazon Product Review Sentiment Analysis Using Machine Learning - Ms Mohammad Arsha Sultana,P. Rakesh, M. Sandeep, G. Jagadeesh	16-20
5	An Interactive Study Of Thyroid Disease Prediction Using Machine Learning - D. Lokesh Gupta, D.Lokesh Gupta, K.V.Narasimha Reddy, D.Ramesh, V.Veerendra	21-25
6	Autoregressive Integrated Moving Average Model For Prediction Of Crypto Currency, - Pokuri Jaya Venkata Naga Sudhakar,Alladi Anil,Avula Venkata Rami Reddy,V. Mahesh Babu	26--29
7	Biometric Identification Scheme With Efficient Privacy-Preserving Mechanism For Cloud Computing Service, - Shaik Ruksana,Bandaru Naga Siva Saisuryatejaswi,Yadavalli Yedukondalu,M Mamatha	30-34
8	Bitcoin Price Prediction -Mrs R.Padmaja,K.V.D Hanisha, B Amulya, M Harika	35-38
9	Calories Burned Prediction, - Niharika Motupalli, B.Siva Kanaka Raju Shaik Mehataj , U. Jhansi Rani, T .Bhavani	39-45
10	Cartoonize Image Using Deep Learning - Gouse Mastan Vali,D.Vamsi Krishna, A.Sairam,K.S.Lakshmi Narayana	46-54
11	Children Speech Recognition Using Machine Learning Methodologies - Dr.T.V.Sai Krishna, R Venkat	55-60

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NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

12	Clarification Of Webbing Through Cloud Computing Technologies - Amara.S.A.L.G.Gopala Gupta,Dr. Gudapati Syam Prasad	61-65
13	Convolutional Lstm Model For Sentiment Analysis On Social Big Data - Raghuveer Pachipulusu,V.Ananth Reddy, R.Sai Kiran, T.Vignesh	66-72
14	Data Preprocessing For Efficient Prediction In Customer Relationship Management, - Patur Ganga, K.Arun	73-78
15	Design And Experimental Study Of Automatic Colour Sorting By A Robotic Arm System - T.Lakshmibai	79-82
16	Detection Of Autism Disorder Based On Eeg Signal Using Deep Learning Methods -Ranjani M.P.Supraja	83-87
17	Detection Of Online Public Shaming With Offensive Content On Twitter, - Gutta Sai Durga,Gopu Sandhya,Jonnalagadda Madhavi, Dr. S.V.N.Srinivasu	88-91
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20	predections in healthy population through machine learning	104-108
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22	DL-CNN Framework For Malicious Social Bots Detection, - Syed Fathima,Ponnapati Mallika,Gandru Akhilendra Chowdary,M. Mamatha	115-120
23	Door Security System Using Face Recognition -Dr A Srinivasa Rao,K.G.J.Prasanth, M. Rama Rao	121-123
24	ECG Classification With Convolutional Neural Networks - S V N Sreenivasu,T Bhargavika,B Anusha ,P Jayasri	124-129
25	Emotion Recognition From Multimodal Data(Speech, Video, Text) Based On Deep Learning Techniques D.P.Supraja	130-137

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26	Estimation Of Population Analysis - Tarun.G.Tarun.T.Purnavamsi.K.Vivekreddy	138-142
27	Eye Ball Cursor Movement Using Opencv - B.Preethi.D.Bharadwaja.B.Preethi. K.Charithra Lavanya.N.Sony	143-147
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29	Facial Expression Recognition With Convolutional Neural Networks - S. Siva Nageswara Rao.S.Ramya. T.Anantha Lavanya	155-162
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31	Fake News Detection - Gangasani Likitha. I. Navya Sri. D. Swetha	168-175
32	Fake News Detection Using Machine Learning - Srikanth Mylapalli.Mylapalli Ramesh	176-180
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36	Head Motion Detection - Dr A Srinivasa Rao.M.Prathyusha. Y.Rajeswari	201-203
37	Heart Disease Prediction Using Machine Learning - Jhansi Lakshmi Manukonda .R. V. P. S. Rekha. T. Divya. G. L. N. Jayaprada	204-208
38	House Price Prediction - Bodlapati Sowmya Reddy.M. Yamini Priya. P. Manasa	209-213
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43	Ipl Score Prediction Using Machine Learning Methods - Rajyalakshmi Dondapati.N.Likitha.M.Anmisha	234-241
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46	Lung Cancer Prediction - Naga Mallika Gude.M. Navya Sri, B. Sukanya	256-263
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48	Mask R-Cnn For Fire Detection - Razeena Begum Shaik.S Yogananda Datta . M S V Manoj	271-276
49	Melanoma Prediction Using Deep Learning - Aishwarya Nallapati.D. Jaya Tejaswini. J. Prashanthi. T. Siri Chandana	277-280
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51	Music Recommendation Application Based On Facial Expressions - Ms Mohammad Arsha Sultana.Abdul Saherabegum, Akhila Umma, Guthula Jayasri Sai Nikitha	287-290
52	Mutual Fund Prediction Using Machine Learning - Shaik Nannu Saidavali.N.Vinay Chandra Pal, K.Bhaskar Reddy	291-295
53	Network Coding Techniques To Store The Data Securely In Cloud. - Guru Brahmam Madala, Vijay Anand R	296-301
54	Network Spam And Fake User Detection In Online Social Networks Using Support Vector Machine. - Majeti Pavan Kalyan.Anchula Sreekanth.Ravi Mahesh Babu.G. Sambasiva Rao	302-307
55	Next Word Prediction Using Recurrent Neural Networks - Srikanth Kolisetty.B. Venkateswarlu. S. Siva Sai Kumar. T. Uday Kumar	308-313

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56	Nobel Methodologies For Immigration Of Service Oriented Architecture Based Applications To Microservice Architecture - M Madhu Sudhan, P Indupriyankaray, Aelluri Lakshmi, M Sreenandan Reddy	314-317
57	Plant Leaf Disease Detection System Using Resnet-50 - Chappa.Ramya Sai,K.Kavya,K.Meghana,A.Tulasi	318-321
58	Predicting The Survival Of Patients With Heart Failure-Machine Learning Methods - Hemalatha Tatiparthi,G.Mounika,K.Prasanthi,G.Hemavani	322-329
59	Prediction Of Agriculture Yields Using Machine Learning Algorithms. - Katepalli Sai Sravanthi,Grandhisila Venkatanagalakshmipravallika,Kollipara Harika ,M. Mamatha	330-335
60	Prediction Of Covid 19 Epidemics Using Data Analytics - S.Anil Kumar,G.Sathar	336-343
61	Prediction Of Covid Readmissions Using Machine Learning - Athukuri Lakshmi Narendra Kumar,B.V.V.N.Sai Kumar	344-347
62	Rainfall Prediction Using Machine Learning - Anusha Bhavanam,Ch. Vyshnavi, Ch.Priyanka	348-353
63	Review On Load Balancing Using Cloud Computing - J Raghunath ,A Chandra Sekhar, Shaik Razia, D Venkatesh	354-362
64	Road Safety And Vehicle Accident Prevention - G.Gayatri,G.Gayatri,K.Sugunitha	363-367
65	Sensile Soil Analyzing Application - Mathi Raasi,G.Santhi Sri,M Sravya,Shaik Khaja Mohiddin Basha	368-373
66	Sentiment Analysis Of Movie Reviews Using Ml -Mukunda Gagula,Lakshma Reddy,Sai Venkatesh,Shaik Rafi	374-377
67	Supevised Learning Models for perception of Multi-Trafic Scene	378-383
68	Smart Parking System Using Web Application. - K Razeena Begum, S Anand, K Vivek, K Manideep	384-387

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70	Stock Value Prediction Using Regression - B.Jhansi Vazram. G.Venkatrao. D.Srtinivasa Reddy. V.Ashok Kumar	399-404
71	Summarized Reviews With Attention Mechanism Using Lstm - Tahfeem Shaik.Sirajuddin.Shaikrafi	405-408
72	Supervised Learning For Fraud And Malware Detection From Android Applications. - Tunuguntla Bala Bhaskar Rao ,Dronadula Narendra. Maddu Phanindra Kumar.Dr. S.V.N.Srinivasu	409-415
73	Trust-Based Privacy Preserving Photo Sharing In Online Social Networks - Mrs R.Padmaja,Sk.Shahnoor. N.Nikhila, L.Thanusha	416-419
74	Useableness And Applications Of Blockchain Technology In Cloud Computing Environment - D Venkatesh.M Vijaya Bhaskar. J Raghunath. D Raghava Raju	420-426
75	Weather Prediction - Kotha Tharun Teja,G.Ashok,K.Raviteja,N.Raviteja	427-431
76	Wholesale And Retail Store Management System - Mr K Siva Rama Krishna,Saranya Bala.Y ,Triveni.V , Sai Divya	432-435

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30

Generic Recommendation Engine using Hybrid Filtering Model

1.G Prabhakara Reddy*,gpreddy.mlrit@gmail.com, MLR Institute of Technology,

2.O Ramesh**,rameshmalyadri@gmail.com, MLR Institute of Technology,

3.Ch Anil ***,chintalapudianil5@gmail.com,Narasaraopet Engineering College.

Computer science and engineering

ABSTRACT:

Recommendation system provides the facility to understand a person's taste and find new, desirable content for them automatically based on the pattern between their likes and rating of different items. Recommendation systems are mainly employed in applications such as online market, which works with big data. Performing data mining on big data is a tedious task due to its distributed nature and enormity.There are humanely overwhelming number of items for us to inspect,evaluate and choose from.This poses a huge challenge,since overwhelming the customers with huge catalog of items out of which the major portion of items are unrelated to user preferences. And so there is an imminent need for a recommendation system that eases the process of choosing products by the user and thereby enriching the user experience.To overcome this problem,a recommendation system that uses multiple ML algorithms ,a hybrid version of content based filtering and collaborative item-item filtering algorithm is implemented so as to achieve better accuracy in recommendations.The project is aimed to result in a generic recommendation engine suitable for using with any type of items irrespective of domain and datasets.

Keywords—user preferences, big data, item-item collaborative filtering

1. INTRODUCTION

Recommender Systems are tools that emerged in the 90s which are commonly defined as software tools and techniques used to provide suggestions for items to users.Recommendation algorithms are mostly used on e-commerce web sites like Amazon,Flipkart and Myntra where they make use of customer's interests and display a subset of items.Many of these algorithms use only the items that are purchased or viewed by customer previously.But other attributes like demographic data ,favourite items,favourite sellers,artists can also be used for much effective recommendations.

Recommender systems are very good at handling the information overload problem,they provide a customised,personalised set of recommendations for each specific user thereby showing them with content that is relevant to them,thereby easing the amount of effort the users need to exert to filter and find items that they desire.These systems act as means of assisting the social process of using others suggestions,reviews when there is no previous knowledge at the user-side.These systems can either make use of collaborative filtering,content based filtering or hybrid filtering.

People have always relied on other people's suggestions for decision making whenever there are many options in order to make the best decision. In the last decade or so,the amount of digital information has grown in an exponential manner,leading to huge information that is mostly not rated and arranged properly. Information overload is difficulty in understanding an issue and making decisions when one has too much information about that issue, it is generally associated with excessive quantity of information.``Information overload generally occurs when a person is exposed to huge and more information than the brain can process at one time." As more and more complex information is taken in by us in a very less amount of time and we happen to have more options laid out in front of us,our brains start to panic, resulting in us losing the ability to make good decisions.

These recommendation algorithms find a set of customers who also purchased a similar subset of items that are also purchased by the user.Then concerned ratings are also considered for filtering.Then finally all these items are aggregated from the previously computed similar set of customers,in the meanwhile all the items that are already previously purchased by the user are eliminated ,inturn showing the remaining list of items .There are two types of such algorithms,these are collaborative filtering and cluster models.Other less popular versions are search based methods which focus on finding similar items but not similar customers.Amazon's item-item collaborative filtering algorithm is one such example of this.

2. LITERATURE SURVEY

Hybrid Recommendations:-

In this paper[7] the author details the intricacies of hybrid recommendation systems. Hybrid algorithms are implemented in several ways either by making collaborative-based predictions and content-based separately and then combining them or by adding collaborative-based capabilities to a content-based approach and vice-versa or by unifying the approaches into one model.Several studies that compare the performance of the hybrid with the pure collaborative and content-based methods demonstrated that the hybrid methods can provide more accurate recommendations .Hybrid recommendation

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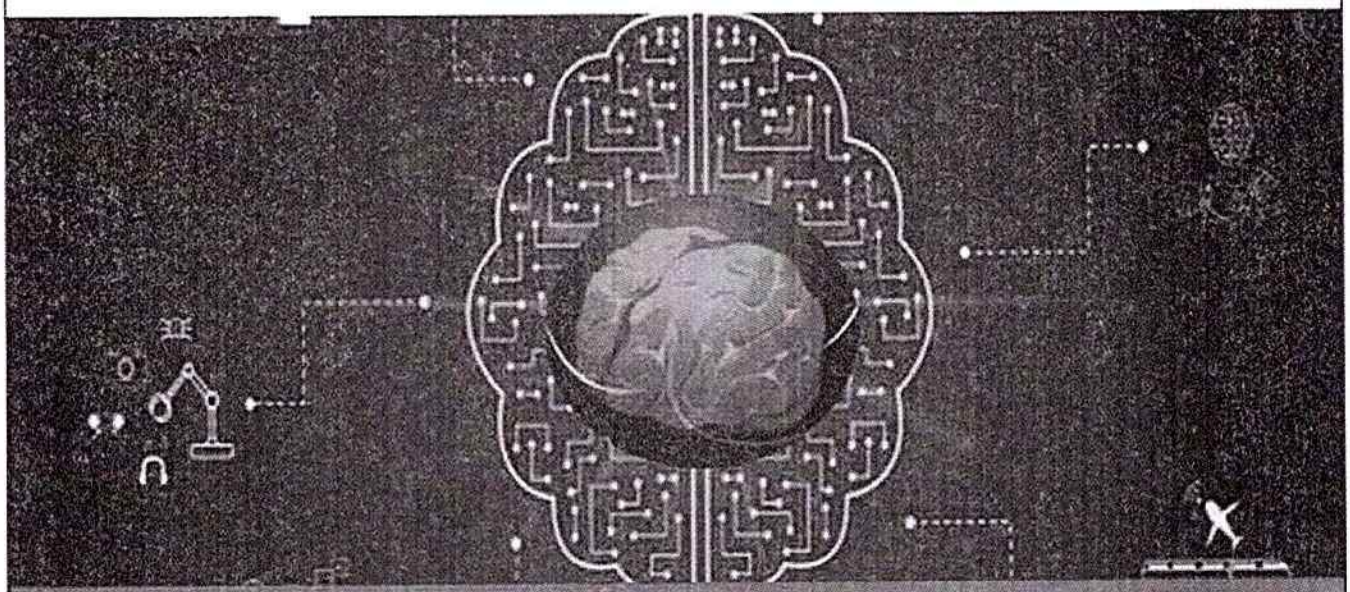

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Artificial Intelligence and Its Emerging Areas

-

REF. NO	TITLE OF THE PAPER AND AUTHOR(S)	Page No.
	Artificial Intelligence and Its Emerging Areas -NEC-ICAIIA 2K21	
1.	A Data Mining Based Model For Detection Of Deceitful Behaviour In Water Consumption - Tejasri Choudi,B.V.Satish, V.Naga Jyothi, K.Navya	1-5
2	A Machine Learning Framework For Prediction Of Heart Disease. Ramasetty Ramu.Kota Jagadeesh.Chanti Rajamohan Reddy.V. Mahesh Babu	6-10
3	A Supervised Learning Algorithm For Credit Card Fraud Detection. - Guggilam Sai Sri, Gummadilli Gouthami, Potluri Srividya, M. Mamatha	11-15
4	Amazon Product Review Sentiment Analysis Using Machine Learning - Ms Mohammad Arsha Sultana.P. Rakesh, M. Sandeep, G. Jagadeesh	16-20
5	An Interactive Study Of Thyroid Disease Prediction Using Machine Learning - D. Lokesh Gupta, D.Lokesh Gupta, K.V.Narasimha Reddy, D.Ramesh, V.Veerendra	21-25
6	Autoregressive Integrated Moving Average Model For Prediction Of Crypto Currency, - Pokuri Jaya Venkata Naga Sudhakar.Alladi Anil.Avula Venkata Rami Reddy.V. Mahesh Babu	26--29
7	Biometric Identification Scheme With Efficient Privacy-Preserving Mechanism For Cloud Computing Service, - Shaik Ruksana,Bandaru Naga Siva Saisuryatejaswi,Yadavalli Yedukondalu,M Mamatha	30-34
8	Bitcoin Price Prediction -Mrs R.Padmaja,K.V.D Hanisha, B Amulya, M Harika	35-38
9	Calories Burned Prediction, - Niharika Motupalli, B.Siva Kanaka Raju Shaik Mehataj , U. Jhansi Rani, T .Bhavani	39-45
10	Cartoonize Image Using Deep Learning - Gouse Mastan Vali,D.Vamsi Krishna, A.Sairam,K.S.Lakshmi Narayana	46-54
11	Children Speech Recognition Using Machine Learning Methodologies - Dr.T.V.Sai Krishna, R Venkat	55-60

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Principal
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12	Clarification Of Webbing Through Cloud Computing Technologies - Amara.S.A.L.G.Gopala Gupta.Dr. Gudapati Syam Prasad	61-65
13	Convolutional Lstm Model For Sentiment Analysis On Social Big Data - Raghuveer Pachipulusu.V.Ananth Reddy. R.Sai Kiran. T.Vignesh	66-72
14	Data Preprocessing For Efficient Prediction In Customer Relationship Management. - Patur Ganga. K.Arun	73-78
15	Design And Experimental Study Of Automatic Colour Sorting By A Robotic Arm System - T.Lakshmibai	79-82
16	Detection Of Autism Disorder Based On Eeg Signal Using Deep Learning Methods -Ranjani M.P.Supraja	83-87
17	Detection Of Online Public Shaming With Offensive Content On Twitter. - Gutta Sai Durga.Gopu Sandhya.Jonnalagadda Madhavi. Dr. S.V.N.Srinivasu	88-91
18	Detection Of Phishing Attacks Using Natural Language Processing And Logistic Regression Model. - Surubula Thirupathi Rao.Pothukuchi Mahesh Babu.Rayala Venu.V. Mahesh Babu	92-98
19	Detection Of Social Network Mental Disorders Through Mining Of Online Social Media. - Battula Venkata Ananta Mehar Gopi.Rajarapu Venu Babu.Maddineni Naveen .Dr. S.V.N.Srinivasu	99-103
20	predections in healthy population through machine learning	104-108
21	Diabetics Prediction using Machine Learning Techniques. - Pathan Sajida. S.Amulya , V.Nandhini	109-114
22	DL-CNN Framework For Malicious Social Bots Detection. - Syed Fathima.Ponnapati Mallika.Gandru Akhilendra Chowdary.M. Mamatha	115-120
23	Door Security System Using Face Recognition -Dr A Srinivasa Rao.K.G.J.Prasanth. M. Rama Rao	121-123
24	ECG Classification With Convolutional Neural Networks - S V N Sreenivasu.T Bhargavika.B Anusha .P Jayasri	124-129
25	Emotion Recognition From Multimodal Data(Speech. Video. Text) Based On Deep Learning Techniques D.P.Supraja	130-137

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Principal
NARASARAOPETA ENGINEERING COLLEGE
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NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

26	Estimation Of Population Analysis - Tarun.G.Tarun.T.Purnavamsi.K.Vivekreddy	138-142
27	Eye Ball Cursor Movement Using Opencv - B.Preethi.D.Bharadwaja.B.Preethi. K.Charithra Lavanya.N.Sony	143-147
28	Face.Age And Gender Recogntion System Based on Deep Neural Networks - Gudapati Syam Prasad.K.Narendra Babu.N.Hemanth Kumar.K.Sriniivas	148-154
29	Facial Expression Recognition With Convolutional Neural Networks - S. Siva Nageswara Rao.S.Ramya. T.Anantha Lavanya	155-162
30	Fake Currency Detection. - Mr.Sk.K.M.Basha , Yalagala Hema Latha. Gatakala Venkata Sravya Bhavani. Macharla Maitili	163-167
31	Fake News Detection - Gangasani Likitha. I. Navya Sri. D. Swetha	168-175
32	Fake News Detection Using Machine Learning - Srikanth Mylapalli.Mylapalli Ramesh	176-180
33	Forest Fires Detection Using Machine Learning Algorithms - N.S.Sesi Kiran.P. Lakshmi Narayana. Sk. Mastanvali. P. Nivas	181-185
34	Functioning Of Artificial Intelligence In An Self-Driving Vehicle - A Review -Penugonda Surya Teja.None	186-189
35	Generic Recommendation Engine Using Hybrid Filtering Model - G Prabhakara Reddy.O Ramesh. Ch Anil	190-200
36	Head Motion Detection - Dr A Srinivasa Rao.M.Prathyusha. Y.Rajeswari	201-203
37	Heart Disease Prediction Using Machine Learning - Jhansi Lakshmi Manukonda .R. V. P. S. Rekha. T. Divya. G. L. N. Jayaprada	204-208
38	House Price Prediction - Bodlapati Sowmya Reddy.M. Yamini Priya. P. Manasa	209-213
39	Image Captioning Using Deep Learning - Y E V Pratap Kumar Kuchi.M.Sireesha. G. Sai Akhil. K. Hema Sai Mourya Gupta	214-219

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NARASARAOPETA ENGINEERING COLLEGE
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NARASARAOPET - 522 601.
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40	Image Classification Using Object Detection With YOLO Algorithm. Shaik Bhadhar Shareef.Putchakayala Ramesh.Angajala Anil.G. Sambasiva Rao	220-223
41	Implementation Of Video Steganography Cryptography System For Iot-Based Cloud Computing Security. - Samvarapu Sagar Reddy.Mallavarapu Nikhil.Chevala Venkatesh.Dr. S.V.N.Srinivasu	224-228
42	Inform Me-Family Gps Locator - Oruganti Ramesh.G Prabhakara Reddy. Ch. Anil	229-233
43	Ipl Score Prediction Using Machine Learning Methods - Rajyalakshmi Dondapati.N.Likitha.M.Anmisha	234-241
44	Liver Disease Prediction Using Machine Learning Methods - Sravana Sandhya Rani Karnati.K. Sravana Sandhya Rani, B.V.Gayithri.K.Vijayalakshmi	242-249
45	Loan Prediction System - Divya Gopavarapu.K.Manasa.A.Akhila.M.Sireesha	250-255
46	Lung Cancer Prediction - Naga Mallika Gude.M. Navya Sri, B. Sukanya	256-263
47	Map Reduced Segmentation Clustering For Big Data Analytics Using Extended K-Mean Clustering Technique - Mvs.Prasad	264-270
48	Mask R-Cnn For Fire Detection - Razeena Begum Shaik.S Yogananda Datta , M S V Manoj	271-276
49	Melanoma Prediction Using Deep Learning - Aishwarya Nallapati.D. Jaya Tejaswini. J. Prashanthi. T. Siri Chandana	277-280
50	Multilevel Hierarchy Based Privacy Preserved Profile Publishing In Cloud Environment. - Esthala Abhishek.Kambhampati Adinarayana.Battula Ramesh.G. Sambasiva Rao	281-286
51	Music Recommendation Application Based On Facial Expressions - Ms Mohammad Arsha Sultana.Abdul Saherabegum. Akhila Umma. Guthula Jayasri Sai Nikitha	287-290
52	Mutual Fund Prediction Using Machine Learning - Shaik Nannu Saidavali.N.Vinay Chandra Pal. K.Bhaskar Reddy	291-295
53	Network Coding Techniques To Store The Data Securely In Cloud. - Guru Brahmam Madala. Vijay Anand R	296-301
54	Network Spam And Fake User Detection In Online Social Networks Using Support Vector Machine. - Majeti Pavan Kalyan.Anchula Sreekanth.Ravi Mahesh Babu.G. Sambasiva Rao	302-307
55	Next Word Prediction Using Recurrent Neural Networks - Srikanth Kolisetty.B. Venkateswarlu. S. Siva Sai Kumar. T. Uday Kumar	308-313

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Guntur (Dist.), A.P.

56	Nobel Methodologies For Immigration Of Service Oriented Architecture Based Applications To Microservice Architecture - M Madhu Sudhan, P Indupriyankaray, Aelluri Lakshmi, M Sreenandan Reddy	314-317
57	Plant Leaf Disease Detection System Using Resnet-50 - Chappa.Ramya Sai,K.Kavya,K.Meghana,A.Tulasi	318-321
58	Predicting The Survival Of Patients With Heart Failure-Machine Learning Methods - Hemalatha Tatiparthi,G.Mounika,K.Prasanthi,G.Hemavani	322-329
59	Prediction Of Agriculture Yields Using Machine Learning Algorithms. - Katepalli Sai Sravanthi,Grandhisila Venkatanagalakshmipravallika,Kollipara Harika ,M. Mamatha	330-335
60	Prediction Of Covid 19 Epidemics Using Data Analytics - S.Anil Kumar,G.Sathar	336-343
61	Prediction Of Covid Readmissions Using Machine Learning - Athukuri Lakshmi Narendra Kumar,B.V.V.N.Sai Kumar	344-347
62	Rainfall Prediction Using Machine Learning - Anusha Bhavanam,Ch. Vyshnavi, Ch.Priyanka	348-353
63	Review On Load Balancing Using Cloud Computing - J Raghunath ,A Chandra Sekhar, Shaik Razia, D Venkatesh	354-362
64	Road Safety And Vehicle Accident Prevention - G.Gayatri,G.Gayatri,K.Sugunitha	363-367
65	Sensile Soil Analyzing Application - Mathi Raasi,G.Santhi Sri,M Sravya,Shaik Khaja Mohiddin Basha	368-373
66	Sentiment Analysis Of Movie Reviews Using Ml -Mukunda Gagula,Lakshma Reddy,Sai Venkatesh,Shaik Rafi	374-377
67	Supevised Learning Models for perception of Multi-Trafic Scene	378-383
68	Smart Parking System Using Web Application, - K Razeena Begum, S Anand, K Vivek, K Manideep	384-387

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69	Social Distance Monitoring Using Deep Learning - Satuluri Vijaya Lakshmi.K.K.N. Bhuvaneswari. B.Vijaya Lakshmi	388-398
70	Stock Value Prediction Using Regression - B.Jhansi Vazram. G.Venkatrao. D.Srtinivasa Reddy. V.Ashok Kumar	399-404
71	Summarized Reviews With Attention Mechanism Using Lstm - Tahfeem Shaik,Sirajuddin,Shaikrafi	405-408
72	Supervised Learning For Fraud And Malware Detection From Android Applications. - Tunuguntla Bala Bhaskar Rao ,Dronadula Narendra. Maddu Phanindra Kumar.Dr. S.V.N.Srinivasu	409-415
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Predicting the survival of patients with Heart Failure-Machine LearningMethods

T.Hemalatha[1], G.Mounika [2], K.Prasanthi[3], G.Hemavani[4]
Student,Computer Science and Engineering
Dr.S.V.N.Srinivasu[5],Professor,Computer Science andEngineering
Narasaraopeta Engineering College, Narsaraopeta

hemathatiparthi01@gmail.com, mounikaguntupalli99@gmail.com,
kollaprasanthi8@gmail.com, gorantlahemavavi77@gmail.com, dr.svnsrinivasu@gmail.com

ABSTRACT

Heart failures are the number 1 cause of death globally, taking an estimated 17.9 millions of lives each year. CVDs are a group of disorders of the heart and blood vessels and include coronary heart disease, cerebrovascular disease, rheumatic heart d is eas e and other conditions. In this paper, we analyze a dataset of 299 patients with heart failure collected in 2015. We apply several machine learning classifiers predict the patients survival of patients. And finally we choosed the algorithm as RFE which having accuracy 95%.

Keywords:

Heart failure. Serum creatinine, Ejection fraction

1. INTRODUCTION:

Heart failure is a term covering any disorder of the heart. Heart failure have become a major concern to deal with as studies show that the number of deaths due to heart failure have increased significantly over the past few decades in India, in fact it has become the leading cause of death in India.

A study shows that from 1990 to 4016 the death rate due to heart failures have increased around 34 per cent from 155.7 to 409.1 deaths per one lakh population in India.

Thus preventing Heart failures has become more than necessary. Good data-driven systems for predictin g heart failures can improve the entire research and prevention process, making sure that more people can live healthy lives. This is where Machine Learning comes into play. Machine Learning helps in predicting the Heart failures, and the predictions made are quite accurate.

Classification algorithms are one of the most important category of supervised machine learning algorithms. These algorithms require a very large training set. These training data sets are consisting of different features and also different attributes which describe the individual sample. Since we are doing different supervised learning algorithm. All the training set are labelled correctly. The classification algorithms such as decis io n trees, Gaussian Naïve Bayes, Random Forest, K- nearest neighbours, K-Means and support vector machines (SVM), develop model with these data with many different parameters. When we have a new unlabeled sample, then we can use the model to predict the label of new sample. These techniques are used for predicting whether a pers o n is died or not.

2. LITERATURE SURVEY

CVD are disorders of the heart and blood vessels including, coronary heart disease (heart attacks), cerebrovascular diseases (strokes), heart failure (HF), and other types of pathology [1]. Altogether, Heart diseases cause the death of approximately 17 million people worldwide annually, with the fatalities figures on the rise for the first time in the 50 years in the United Kingdom [4]. In particular, heart failure occurs when the heart is unab le to pump enough blood to the body, and it is usually caused by diabetes, high blood pressure, or other heart conditions or diseases [3]. The clinical community groups the heart failure in to two different types based on the ejection fraction value, that is the. proportion of blood which is pumped out of the heart during a single contraction, given in the form of percentage with certain values ranging between 50% and75%.

The former is heart failure due to reduced ejection fraction, previously known as heart failure due to left ventricular systolic dysfunction or systolic heart failure and characterized by an ejection fraction smaller than 40% [4]. The latter is heart failure with preserved ejection fraction, formerly called diastolic heart failure or heart failure with normal ejection fraction. In this case, left ventricle contracts normally during systole, but the ventricle is stiff and fails to relax normally during diastole, thus impairing filling [5–10]. For the quantitativ e evaluation of the disease progression, clinicians rely on th e New York Heart Association functional classification, including four classes ranging from no symptoms from ordinary activities (Class I) to a stage where any physical activity brings on discomfort and symptoms occur at rest (Class IV)[12-19]. Despite it is in. widespread use, there is no any other consistent method of assessing the NYHA score, and this classification fails to reliably predict the basic features, such as walking distance or exercise tolerance on formal testing [11].

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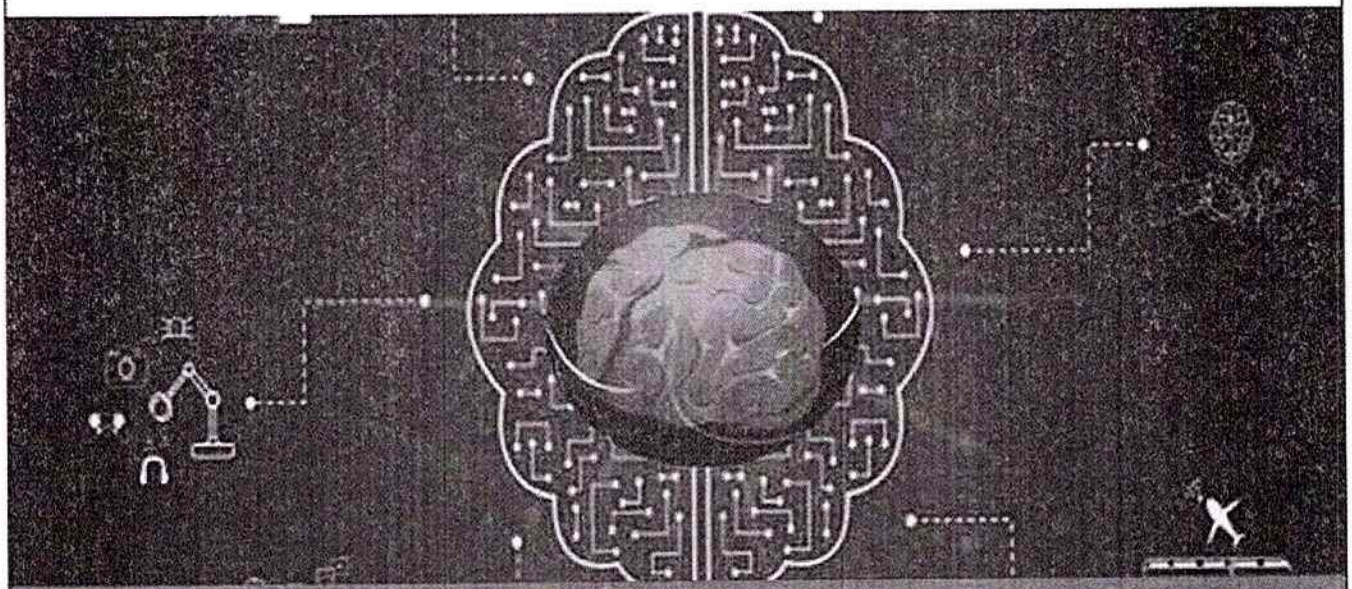

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-

REF. NO	TITLE OF THE PAPER AND AUTHOR(S)	Page No.
	Artificial Intelligence and Its Emerging Areas -NEC-ICAIIA 2K21	
1.	A Data Mining Based Model For Detection Of Deceitful Behaviour In Water Consumption - Tejasri Choudi,B.V.Satish, V.Naga Jyothi, K.Navya	1-5
2	A Machine Learning Framework For Prediction Of Heart Disease. Ramasetty Ramu,Kota Jagadeesh,Chanti Rajamohan Reddy,V. Mahesh Babu	6-10
3	A Supervised Learning Algorithm For Credit Card Fraud Detection. - Guggilam Sai Sri, Gummadilli Gouthami, Potluri Srividya, M. Mamatha	11-15
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7	Biometric Identification Scheme With Efficient Privacy-Preserving Mechanism For Cloud Computing Service. - Shaik Ruksana,Bandaru Naga Siva Satsuryatejaswi,Yadavalli Yedukondalu,M Mamatha	30-34
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9	Calories Burned Prediction. - Niharika Motupalli, B.Siva Kanaka Raju Shaik Mehataj , U. Jhansi Rani, T .Bhavani	39-45
10	Cartoonize Image Using Deep Learning - Gouse Mastan Vali,D.Vamsi Krishna, A.Sairam,K.S.Lakshmi Narayana	46-54
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13	Convolutional Lstm Model For Sentiment Analysis On Social Big Data - Raghuveer Pachipulusu,V.Ananth Reddy. R.Sai Kiran. T.Vignesh	66-72
14	Data Preprocessing For Efficient Prediction In Customer Relationship Management. - Patur Ganga. K.Arun	73-78
15	Design And Experimental Study Of Automatic Colour Sorting By A Robotic Arm System - T.Lakshmibai	79-82
16	Detection Of Autism Disorder Based On Eeg Signal Using Deep Learning Methods -Ranjani M.P.Supraja	83-87
17	Detection Of Online Public Shaming With Offensive Content On Twitter. - Gutta Sai Durga.Gopu Sandhya.Jonnalagadda Madhavi. Dr. S.V.N.Srinivasu	88-91
18	Detection Of Phishing Attacks Using Natural Language Processing And Logistic Regression Model. - Surubula Thirupathi Rao.Pothukuchi Mahesh Babu.Rayala Venu.V. Mahesh Babu	92-98
19	Detection Of Social Network Mental Disorders Through Mining Of Online Social Media. - Battula Venkata Ananta Mehar Gopi.Rajarapu Venu Babu.Maddineni Naveen .Dr. S.V.N.Srinivasu	99-103
20	predections in healthy population through machine learning	104-108
21	Diabetics Prediction using Machine Learning Techniques. - Pathan Sajida. S.Amulya . V.Nandhini	109-114
22	DL-CNN Framework For Malicious Social Bots Detection. - Syed Fathima,Ponnapati Mallika,Gandru Akhilendra Chowdary,M. Mamatha	115-120
23	Door Security System Using Face Recognition -Dr A Srinivasa Rao.K.G.J.Prasanth. M. Rama Rao	121-123
24	ECG Classification With Convolutional Neural Networks - S V N Sreenivasu.T Bhargavika,B Anusha .P Jayasri	124-129
25	Emotion Recognition From Multimodal Data(Speech. Video. Text) Based On Deep Learning Techniques D.P.Supraja	130-137

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Principal
NARASARAOPETA ENGINEERING COLLEGE
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NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

26	Estimation Of Population Analysis - Tarun.G.Tarun.T.Purnavamsi.K.Vivekreddy	138-142
27	Eye Ball Cursor Movement Using Opencv - B.Preethi.D.Bharadwaja.B.Preethi. K.Charithra Lavanya.N.Sony	143-147
28	Face.Age And Gender Recogntion System Based on Deep Neural Networks - Gudapati Syam Prasad.K.Narendra Babu.N.Hemanth Kumar.K.Sriniivas	148-154
29	Facial Expression Recognition With Convolutional Neural Networks - S. Siva Nageswara Rao.S.Ramya. T.Anantha Lavanya	155-162
30	Fake Currency Detection. - Mr.Sk.K.M.Basha , Yalagala Hema Latha. Gatakala Venkata Sravya Bhavani. Macharla Maitili	163-167
31	Fake News Detection - Gangasani Likitha. I. Navya Sri. D. Swetha	168-175
32	Fake News Detection Using Machine Learning - Srikanth Mylapalli.Mylapalli Ramesh	176-180
33	Forest Fires Detection Using Machine Learning Algorithms - N.S.Sesi Kiran.P. Lakshmi Narayana, Sk. Mastanvali, P. Nivas	181-185
34	Functioning Of Artificial Intelligence In An Self-Driving Vehicle - A Review -Penugonda Surya Teja.None	186-189
35	Generic Recommendation Engine Using Hybrid Filtering Model - G Prabhakara Reddy,O Ramesh, Ch Anil	190-200
36	Head Motion Detection - Dr A Srinivasa Rao.M.Prathyusha, Y.Rajeswari	201-203
37	Heart Disease Prediction Using Machine Learning - Jhansi Lakshmi Manukonda ,R. V. P. S. Rekha, T. Divya, G. L. N. Jayaprada	204-208
38	House Price Prediction - Bodlapati Sowmya Reddy,M. Yamini Priya, P. Manasa	209-213
39	Image Captioning Using Deep Learning - Y E V Pratap Kumar Kuchi,M.Sireesha, G. Sai Akhil, K. Hema Sai Mourya Gupta	214-219

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NARASARAOPETA ENGINEERING COLLEGE
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Guntur (Dist.), A.P.

40	Image Classification Using Object Detection With YOLO Algorithm. Shaik Bhadhar Shareef.Putchakayala Ramesh.Angajala Anil.G. Sambasiva Rao	220-223
41	Implementation Of Video Steganography Cryptography System For Iot-Based Cloud Computing Security. - Sanivarapu Sagar Reddy.Mallavarapu Nikhil.Chevala Venkatesh.Dr. S.V N.Srinivasu	224-228
42	Inform Me-Family Gps Locator - Oruganti Ramesh.G Prabhakara Reddy. Ch. Anil	229-233
43	Ipl Score Prediction Using Machine Learning Methods - Rajyalakshmi Dondapati.N.Likitha.M.Anmisha	234-241
44	Liver Disease Prediction Using Machine Learning Methods - Sravana Sandhya Rani Karnati.K. Sravana Sandhya Rani. B.V.Gayithri.K.Vijayalakshmi	242-249
45	Loan Prediction System - Divya Gopavarapu.K.Manasa.A.Akhila.M.Sireesha	250-255
46	Lung Cancer Prediction - Naga Mallika Gude.M. Navya Sri. B. Sukanya	256-263
47	Map Reduced Segmentation Clustering For Big Data Analytics Using Extended K-Mean Clustering Technique - Mvs.Prasad	264-270
48	Mask R-Cnn For Fire Detection - Razeena Begum Shaik.S Yogananda Datta . M S V Manoj	271-276
49	Melanoma Prediction Using Deep Learning - Aishwarya Nallapati.D. Jaya Tejaswini. J. Prashanthi. T. Siri Chandana	277-280
50	Multilevel Hierarchy Based Privacy Preserved Profile Publishing In Cloud Environment. - Esthala Abhishek.Kambhampati Adinarayana.Battula Ramesh.G. Sambasiva Rao	281-286
51	Music Recommendation Application Based On Facial Expressions - Ms Mohammad Arsha Sultana.Abdul Saherabegum. Akhila Umma. Guthula Jayasri Sai Nikitha	287-290
52	Mutual Fund Prediction Using Machine Learning - Shaik Nannu Saidavali.N.Vinay Chandra Pal. K.Bhaskar Reddy	291-295
53	Network Coding Techniques To Store The Data Securely In Cloud. - Guru Brahmam Madala. Vijay Anand R	296-301
54	Network Spam And Fake User Detection In Online Social Networks Using Support Vector Machine. - Majeti Pavan Kalyan.Anchula Sreekanth.Ravi Mahesh Babu.G. Sambasiva Rao	302-307
55	Next Word Prediction Using Recurrent Neural Networks - Srikanth Kolisetty.B. Venkateswarlu. S. Siva Sai Kumar. T. Uday Kumar	308-313

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56	Nobel Methodologies For Immigration Of Service Oriented Architecture Based Applications To Microservice Architecture - M Madhu Sudhan, P Indupriyankaray, Aelluri Lakshmi, M Sreenandan Reddy	314-317
57	Plant Leaf Disease Detection System Using Resnet-50 - Chappa.Ramya Sai,K.Kavya,K.Meghana,A.Tulasi	318-321
58	Predicting The Survival Of Patients With Heart Failure-Machine Learning Methods - Hemalatha Tatiparthi,G.Mounika,K.Prasanthi,G.Hemavani	322-329
59	Prediction Of Agriculture Yields Using Machine Learning Algorithms. - Katepalli Sai Sravanthi,Grandhisila Venkatanagalakshmipravallika,Kollipara Harika ,M. Mamatha	330-335
60	Prediction Of Covid 19 Epidemics Using Data Analytics - S.Anil Kumar,G.Sathar	336-343
61	Prediction Of Covid Readmissions Using Machine Learning - Athukuri Lakshmi Narendra Kumar,B.V.V.N.Sai Kumar	344-347
62	Rainfall Prediction Using Machine Learning - Anusha Bhavanam,Ch. Vyshnavi, Ch.Priyanka	348-353
63	Review On Load Balancing Using Cloud Computing - J Raghunath ,A Chandra Sekhar, Shaik Razia, D Venkatesh	354-362
64	Road Safety And Vehicle Accident Prevention - G.Gayatri,G.Gayatri,K.Sugunitha	363-367
65	Sensile Soil Analyzing Application - Mathi Raasi,G.Santhi Sri,M Sravya,Shaik Khaja Mohiddin Basha	368-373
66	Sentiment Analysis Of Movie Reviews Using Ml -Mukunda Gagula,Lakshma Reddy,Sai Venkatesh,Shaik Rafi	374-377
67	Supevised Learning Models for perception of Multi-Trafic Scene	378-383
68	Smart Parking System Using Web Application. - K Razeena Begum, S Anand, K Vivek, K Manideep	384-387

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69	Social Distance Monitoring Using Deep Learning - Satuluri Vijaya Lakshmi.K.K.N. Bhuvaneswari, B.Vijaya Lakshmi	388-398
70	Stock Value Prediction Using Regression - B.Jhansi Vazram, G.Venkatrao, D.Srtinivasa Reddy, V.Ashok Kumar	399-404
71	Summarized Reviews With Attention Mechanism Using Lstm - Tahfeem Shaik,Sirajuddin,Shaikrafi	405-408
72	Supervised Learning For Fraud And Malware Detection From Android Applications. - Tunuguntla Bala Bhaskar Rao ,Dronadula Narendra, Maddu Phanindra Kumar,Dr. S.V.N.Srinivasu	409-415
73	Trust-Based Privacy Preserving Photo Sharing In Online Social Networks - Mrs R.Padmaja,Sk.Shahnoor, N.Nikhila, L.Thanusha	416-419
74	Useableness And Applications Of Blockchain Technology In Cloud Computing Environment - D Venkatesh,M Vijaya Bhaskar, J Raghunath, D Raghava Raju	420-426
75	Weather Prediction - Kotha Tharun Teja,G.Ashok,K.Raviteja,N.Raviteja	427-431
76	Wholesale And Retail Store Management System - Mr K Siva Rama Krishna,Saranya Bala.Y ,Triveni.V , Sai Divya	432-435

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NEXT WORD PREDICTION USING RECURRENT NEURAL NETWORKS

Srikanth Kolisetty[1a], Venkateswarlu Burri[1b], Siva Sai Kumar S[1c], Uday Kumar Thota[1d], K.Gnanendra[2]
[1]*Department of CSE, Narasaraopet Engineering College, Narasaraopet, A.P, India*
[a] kolisettysrikanth2@gmail.com
[b] bvenkateswarlu209@gmail.com
[c] siddamsettysivasaikumar2000@gmail.com
[d] uday.lasyathota@gmail.com
[2]*Asst. Prof, Department of CSE, Narasaraopet Engineering College, Narasaraopet, A.P, India*
[2] k.gnanendra@gmail.com

***Abstract*– Natural Language Generation(NLG) focuses on the generation of human interpretable language. This study proposes a methodology to predict the next word in a English sentence. The prediction of the next word can be implemented by using recurrent neural networks, by predicting the next word in a sequence, the number of keystrokes of the user can be reduced. This approach can be used for various NLG tasks like story auto-completion, sentence auto completion.**

***Keywords*– Natural Language Processing, Next Word Prediction, Recurrent Neural Networks, Long Short Term Memory(LSTM).**

I. INTRODUCTION

Next Word Prediction the name itself tells that the aim of the project is to find the next word based on the set of previous input words. In order to implement this task we have explored deep learning techniques that there are different neural networks in the deep learning and we have used recurrent neural networks to implement the task.Recurrent Neural Networks are also used for time series prediction, under recurrent neural networks we have Long Short Term Memory(LSTM) recurrent neural networks which are used to predict the next word.

In this project we build a model by using lstm and that model gets trained with the text data and then we are able to predict the next word. Deep learning is a particular kind of machine learning that achieves power and flexibility by learning to represent the world as a nested hierarchy of concepts with each concept defined in relation to simpler concepts, and more abstract representations computed in terms of less abstract ones.

Deep learning is a branch of machine learning which is completely based on artificial neural networks, as neural networks are going to mimic the human brain so deep learning is also a kind of mimic of the human brain. In deep learning , we don't need to explicitly program everything.

II. LITERATURE SURVEY

Natural Language Generation (NLG) is a systematic and significant approach to produce meaningful text that is understandable by humans. For generating the text, the data is collected from different sources or taken as input from the users. There has been a drastic change in the field of NLP over the past few years. Previously, NLP techniques employed shallow machine learning models, which consisted of handcrafted features and were very very time-consuming. Due to the increasing popularity of word embeddings, neural networks have achieved greater success in comparison to traditional machine learning models.

A. Hassa, et. al.,[22] have proposed RNN for the structure sentence representation. This tree-like structure captures the semantics of the sentences. The text is analyzed word by word by using RNN then the semantic of all the previous texts are preserved in a fixed size hidden layer. For the proposed system LSTM plays an important role, being a memory storage it holds the characters which helps in predicting the next word.

V. Tran, et. al.,[18] have proposed that n-gram is a contiguous sequence of 'n' items from a given sequence of text. If the given sentence is 'S' ,we can construct a list of n-grams from 'S' , by finding pairs of words that occur next to each other. The model is used to derive probability of sentences using the chain rule of unconditional probability.

Neural Networks also gained popularity over the traditional methods due to their correctness in generating the text. Neural Networks are inspired by the functioning of the brain. RNN was popularly used for text generation because of their ability to process sequential data. But due to its limitation of vanishing gradients, it is being replaced by other neural networks. LSTM, and other versions of LSTM, i.e., Bi-LSTM,

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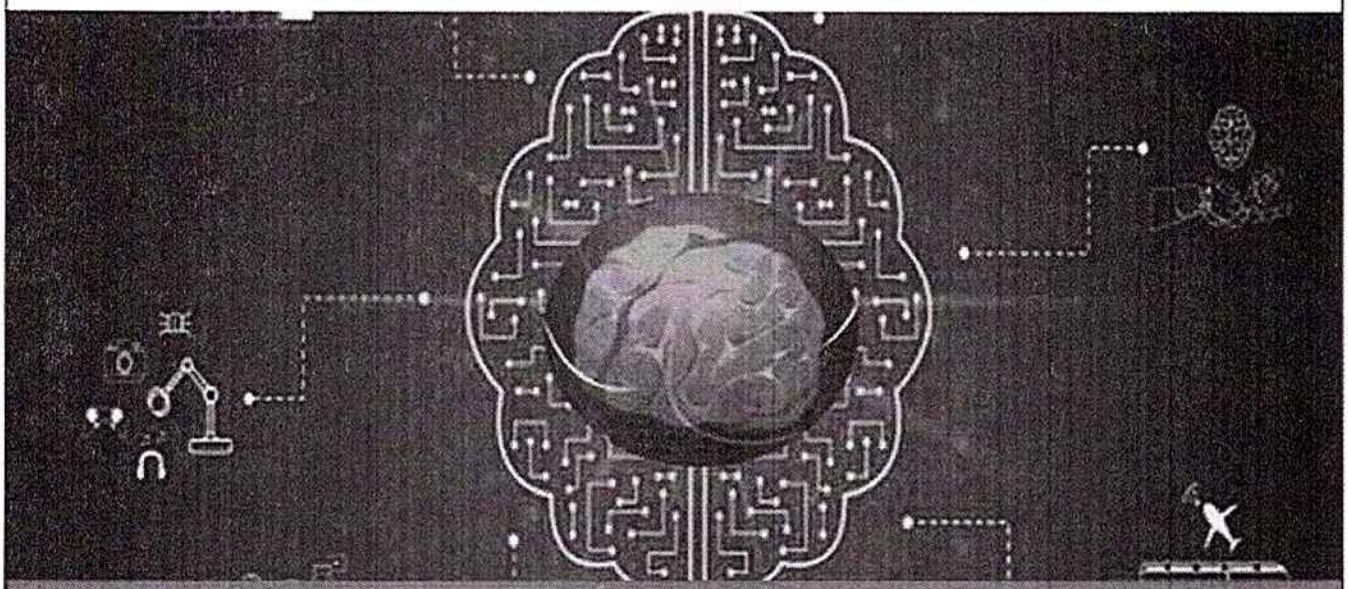

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LIST OF FULL LENGTH PAPERS SELECTED FOR PROCEEDINGS IN

International Conference On

Artificial Intelligence and Its Emerging Areas

-

REF. NO	TITLE OF THE PAPER AND AUTHOR(S)	Page No.
	Artificial Intelligence and Its Emerging Areas -NEC-ICAIIA 2K21	
1.	A Data Mining Based Model For Detection Of Deceitful Behaviour In Water Consumption - Tejasri Choudi,B.V.Satish, V.Naga Jyothi, K.Navya	1-5
2	A Machine Learning Framework For Prediction Of Heart Disease. Ramasetty Ramu,Kota Jagadeesh,Chanti Rajamohan Reddy,V. Mahesh Babu	6-10
3	A Supervised Learning Algorithm For Credit Card Fraud Detection. - Guggilam Sai Sri, Gummadilli Gouthami, Potluri Srividya, M. Mamatha	11-15
4	Amazon Product Review Sentiment Analysis Using Machine Learning - Ms Mohammad Arsha Sultana,P. Rakesh, M. Sandeep, G. Jagadeesh	16-20
5	An Interactive Study Of Thyroid Disease Prediction Using Machine Learning - D. Lokesh Gupta, D.Lokesh Gupta, K.V.Narasimha Reddy, D.Ramesh, V.Veerendra	21-25
6	Autoregressive Integrated Moving Average Model For Prediction Of Crypto Currency. - Pokuri Jaya Venkata Naga Sudhakar,Alladi Anil,Avula Venkata Rami Reddy,V. Mahesh Babu	26--29
7	Biometric Identification Scheme With Efficient Privacy-Preserving Mechanism For Cloud Computing Service. - Shaik Ruksana,Bandaru Naga Siva Saisuryatejaswi,Yadavalli Yedukondalu,M. Mamatha	30-34
8	Bitcoin Price Prediction -Mrs R.Padmaja,K.V.D Hanisha, B Amulya, M Harika	35-38
9	Calories Burned Prediction, - Niharika Motupalli, B.Siva Kanaka Raju Shaik Mehataj , U. Jhansi Rani, T .Bhavani	39-45
10	Cartoonize Image Using Deep Learning - Gouse Mastan Vali,D.Vamsi Krishna, A.Sairam,K.S.Lakshmi Narayana	46-54
11	Children Speech Recognition Using Machine Learning Methodologies - Dr.T.V.Sai Krishna, R Venkat	55-60

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NARASARAOPETA ENGINEERING COLLEGE
(AUTONOMOUS)
NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

12	Clarification Of Webbing Through Cloud Computing Technologies - Amara.S.A.L.G.Gopala Gupta,Dr. Gudapati Syam Prasad	61-65
13	Convolutional Lstm Model For Sentiment Analysis On Social Big Data - Raghuveer Pachipulusu,V.Ananth Reddy. R.Sai Kiran. T.Vignesh	66-72
14	Data Preprocessing For Efficient Prediction In Customer Relationship Management. - Patur Ganga. K.Arun	73-78
15	Design And Experimental Study Of Automatic Colour Sorting By A Robotic Arm System - T.Lakshmibai	79-82
16	Detection Of Autism Disorder Based On Eeg Signal Using Deep Learning Methods -Ranjani M.P.Supraja	83-87
17	Detection Of Online Public Shaming With Offensive Content On Twitter. - Gutta Sai Durga.Gopu Sandhya.Jonnalagadda Madhavi. Dr. S.V.N.Srinivasu	88-91
18	Detection Of Phishing Attacks Using Natural Language Processing And Logistic Regression Model. - Surubula Thirupathi Rao.Pothukuchi Mahesh Babu,Rayala Venu.V. Mahesh Babu	92-98
19	Detection Of Social Network Mental Disorders Through Mining Of Online Social Media. - Battula Venkata Ananta Mehar Gopi.Rajarapu Venu Babu.Maddineni Naveen .Dr. S.V.N.Srinivasu	99-103
20	predections in healthy population through machine learning	104-108
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22	DL-CNN Framework For Malicious Social Bots Detection. - Syed Fathima.Ponnapati Mallika.Gandru Akhilendra Chowdary.M. Mamatha	115-120
23	Door Security System Using Face Recognition -Dr A Srinivasa Rao.K.G.J.Prasanth. M. Rama Rao	121-123
24	ECG Classification With Convolutional Neural Networks - S V N Sreenivasu.T Bhargavika.B Anusha .P Jayasri	124-129
25	Emotion Recognition From Multimodal Data(Speech. Video. Text) Based On Deep Learning Techniques D.P.Supraja	130-137

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26	Estimation Of Population Analysis - Tarun.G.Tarun.T.Purnavamsi.K.Vivekreddy	138-142
27	Eye Ball Cursor Movement Using Opencv - B.Preethi.D.Bharadwaja.B.Preethi. K.Charithra Lavanya.N.Sony	143-147
28	Face.Age And Gender Recogntion System Based on Deep Neural Networks - Gudapati Syam Prasad.K.Narendra Babu.N.Hemanth Kumar.K.Sriniivas	148-154
29	Facial Expression Recognition With Convolutional Neural Networks - S. Siva Nageswara Rao.S.Ramya. T.Anantha Lavanya	155-162
30	Fake Currency Detection. - Mr.Sk.K.M.Basha , Yalagala Hema Latha. Gatakala Venkata Sravya Bhavani. Macharla Maitili	163-167
31	Fake News Detection - Gangasani Likitha. I. Navya Sri. D. Swetha	168-175
32	Fake News Detection Using Machine Learning - Srikanth Mylapalli.Mylapalli Ramesh	176-180
33	Forest Fires Detection Using Machine Learning Algorithms - N.S.Sesi Kiran.P. Lakshmi Narayana, Sk. Mastanvali, P. Nivas	181-185
34	Functioning Of Artificial Intelligence In An Self-Driving Vehicle - A Review -Penugonda Surya Teja.None	186-189
35	Generic Recommendation Engine Using Hybrid Filtering Model - G Prabhakara Reddy,O Ramesh, Ch Anil	190-200
36	Head Motion Detection - Dr A Srinivasa Rao.M.Prathyusha, Y.Rajeswari	201-203
37	Heart Disease Prediction Using Machine Learning - Jhansi Lakshmi Manukonda ,R. V. P. S. Rekha, T. Divya, G. L. N. Jayaprada	204-208
38	House Price Prediction - Bodlapati Sowmya Reddy.M. Yamini Priya. P. Manasa	209-213
39	Image Captioning Using Deep Learning - Y E V Pratap Kumar Kuchi.M.Sireesha. G. Sai Akhil, K. Hema Sai Mourya Gupta	214-219

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40	Image Classification Using Object Detection With YOLO Algorithm. Shaik Bhadhar Shareef.Putchakayala Ramesh.Angajala Anil.G. Sambasiva Rao	220-223
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42	Inform Me-Family Gps Locator - Oruganti Ramesh.G Prabhakara Reddy. Ch. Anil	229-233
43	Ipl Score Prediction Using Machine Learning Methods - Rajyalakshmi Dondapati.N.Likitha.M.Anmisha	234-241
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46	Lung Cancer Prediction - Naga Mallika Gude.M. Navya Sri. B. Sukanya	256-263
47	Map Reduced Segmentation Clustering For Big Data Analytics Using Extended K-Mean Clustering Technique - Mvs.Prasad	264-270
48	Mask R-Cnn For Fire Detection - Razeena Begum Shaik.S Yogananda Datta , M S V Manoj	271-276
49	Melanoma Prediction Using Deep Learning - Aishwarya Nallapati.D. Jaya Tejaswini. J. Prashanthi. T. Siri Chandana	277-280
50	Multilevel Hierarchy Based Privacy Preserved Profile Publishing In Cloud Environment. - Esthala Abhishek.Kambhampati Adinarayana.Battula Ramesh.G. Sambasiva Rao	281-286
51	Music Recommendation Application Based On Facial Expressions - Ms Mohammad Arsha Sultana.Abdul Saherabegum. Akhila Umma. Guthula Jayasri Sai Nikitha	287-290
52	Mutual Fund Prediction Using Machine Learning - Shaik Nannu Saidavali.N.Vinay Chandra Pal. K.Bhaskar Reddy	291-295
53	Network Coding Techniques To Store The Data Securely In Cloud. - Guru Brahmam Madala. Vijay Anand R	296-301
54	Network Spam And Fake User Detection In Online Social Networks Using Support Vector Machine. - Majeti Pavan Kalyan.Anchula Sreekanth.Ravi Mahesh Babu.G. Sambasiva Rao	302-307
55	Next Word Prediction Using Recurrent Neural Networks - Srikanth Kolisetty.B. Venkateswarlu. S. Siva Sai Kumar. T. Uday Kumar	308-313

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56	Nobel Methodologies For Immigration Of Service Oriented Architecture Based Applications To Microservice Architecture - M Madhu Sudhan, P Indupriyankaray, Aelluri Lakshmi, M Sreenandan Reddy	314-317
57	Plant Leaf Disease Detection System Using Resnet-50 - Chappa.Ramya Sai,K.Kavya,K.Meghana,A.Tulasi	318-321
58	Predicting The Survival Of Patients With Heart Failure-Machine Learning Methods - Hemalatha Tatiparthi,G.Mounika,K.Prasanthi,G.Hemavani	322-329
59	Prediction Of Agriculture Yields Using Machine Learning Algorithms. - Katepalli Sai Sravanthi,Grandhisila Venkatanagalakshmipravallika,Kollipara Harika ,M. Mamatha	330-335
60	Prediction Of Covid 19 Epidemics Using Data Analytics - S.Anil Kumar,G.Sathar	336-343
61	Prediction Of Covid Readmissions Using Machine Learning - Athukuri Lakshmi Narendra Kumar,B.V.V.N.Sai Kumar	344-347
62	Rainfall Prediction Using Machine Learning - Anusha Bhavanam,Ch. Vyshnavi, Ch.Priyanka	348-353
63	Review On Load Balancing Using Cloud Computing - J Raghunath ,A Chandra Sekhar, Shaik Razia, D Venkatesh	354-362
64	Road Safety And Vehicle Accident Prevention - G.Gayatri,G.Gayatri,K.Sugunitha	363-367
65	Sensile Soil Analyzing Application - Mathi Raasi,G.Santhi Sri,M Sravya,Shaik Khaja Mohiddin Basha	368-373
66	Sentiment Analysis Of Movie Reviews Using Ml -Mukunda Gagula,Lakshma Reddy,Sai Venkatesh,Shaik Rafi	374-377
67	Supevised Learning Models for perception of Multi-Trafic Scene	378-383
68	Smart Parking System Using Web Application, - K Razeena Begum, S Anand, K Vivek, K Manideep	384-387

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71	Summarized Reviews With Attention Mechanism Using Lstm - Tahfeem Shaik,Sirajuddin,Shaikrafi	405-408
72	Supervised Learning For Fraud And Malware Detection From Android Applications. - Tunuguntla Bala Bhaskar Rao ,Dronadula Narendra. Maddu Phanindra Kumar.Dr. S.V.N.Srinivasu	409-415
73	Trust-Based Privacy Preserving Photo Sharing In Online Social Networks - Mrs R.Padmaja,Sk.Shahnoor. N.Nikhila, L.Thanusha	416-419
74	Useableness And Applications Of Blockchain Technology In Cloud Computing Environment - D Venkatesh.M Vijaya Bhaskar. J Raghunath. D Raghava Raju	420-426
75	Weather Prediction - Kotha Tharun Teja,G.Ashok,K.Raviteja,N.Raviteja	427-431
76	Wholesale And Retail Store Management System - Mr K Siva Rama Krishna.Saranya Bala.Y ,Triveni.V , Sai Divya	432-435

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Estimation of Population Analysis Using Machine Learning

GundaTarun[1], Thota Purna[1], Kamineni Vivek Reddy[1], Dr. S.N.TirumalaRao[1*]

[1] Student, [1] Hod of Cse Department*

Department of Computer Science and Engineering, Narasaraopet Engineering College , Narasaraopet, AP, India.

Email: [illegible]@gmail.com, [illegible]@gmail.com Thota purna[illegible]10@gmail.com

Ka[illegible]reddy[illegible]10@gmail.com

Abstract— Human population growth plays a key role in any regional planning. However, in many data constraint environment, it is not possible to collect the required demographic data to predict the human population growth rate. In such a context, a tool that could help in predicting human population growth without the need to rely on historical data will be very helpful. This study compares different machine learning (ML) techniques namely Linearregression , multilinear regression and artificial neural networkin their ability to predict the population growth rate ('pgr') of an area. The different demographic variables used to predict population growth rate are human population, population density, life expectancy at birth, female life expectancy at birth, infant mortality rate, under five mortality rate and total fertility rate. The study found that all the ML based models were able to predict the population growth rate with more than 90% accuracy. Among the two models The top model is multilinear regression with prediction Accuracy of 96.35% . The study has demonstrated the relevance of ML models in predicting 'pgr' in data Constraint environment.

Keywords— Machine Learning, Population Growth Rate, Linear regression, Multilinear regression.

INTRODUCTION

Population is a group of individuals each other and with their surrounding environment. We can determine the status of a population by measuring and calculating elements common to all populations, such a size, density, fecundity, mortality, sex ratio and age structure. These analysis provide researchers with standardised metrics for comparing populations and assessing extinction risk.

Human population growth plays a key role in any regional planning. However, in many data constraint environment, it is not possible to collect the required demographic data to predict the human population growth rate. In such a context, a tool that could help in predicting human population growth without the need to rely on historical data will be very helpful. This study compares different machine learning (ML) techniques namely knearest neighbors (kNN), decision trees, random forest and artificial neural network in their ability to predict the population growth rate ('pgr') of an area. The different demographic variables used to predict population growth rate are human population, population density, life expectancy at birth, female life expectancy at birth, infant mortality rate, under five mortality rate and total fertility rate. The study found that all the ML based models were able to predict the population growth rate withMore than 90%accuracy

The aim of this project is to create analysis and estimates using the multiple regression model and the binary logistic regression model. The first piece of analysis will involve the multiple regression model, which will be used to explore how well the indicators of fertility and mortality such as total fertility rate, maternal mortality ratio and life expectancy category in different countries can affect or predict their annual population growth rate. Furthermore, the logistic binary regression analysis will be used to show how well the life expectancy category can be predicted by the population rate and maternal mortality ratio.

LITERATURESURVEY

Eron A.[1] In machine learrning there are two types of learning approaches those are supervised learning and non supervised learning used for datasets.

Bongaarts, J.,[2], it describes about the Mortality and life expectency of population other drivers that effect the population growth rate. human mortality and increase the life expentency of
Population that leads to improve the population growth rate.

Deville, p.,[3], It studies the total population in an a rea is dynamically estimated based on the mobile phone data.

Breiman,L., [4] Random tree is an essemble learning approach Which creates multiple decision trees.In this approach , a subset of input parameters is only used to create a single decision tree.This way multiple decision trees are created using different subsets of input parameters .

Murthy, S K.,[5] Human population across the globe tends to follow a similar human population growth curve,in low population the high birth and death rates created at the node Could take each tree start with single node called rootnode

*Nargund, G.,[6],*estimating population growth in data constraint environment .Various demographic factors have been shown to influence the population growth rate.Total fertility rate .has higher population growth rate and low population growth rate.

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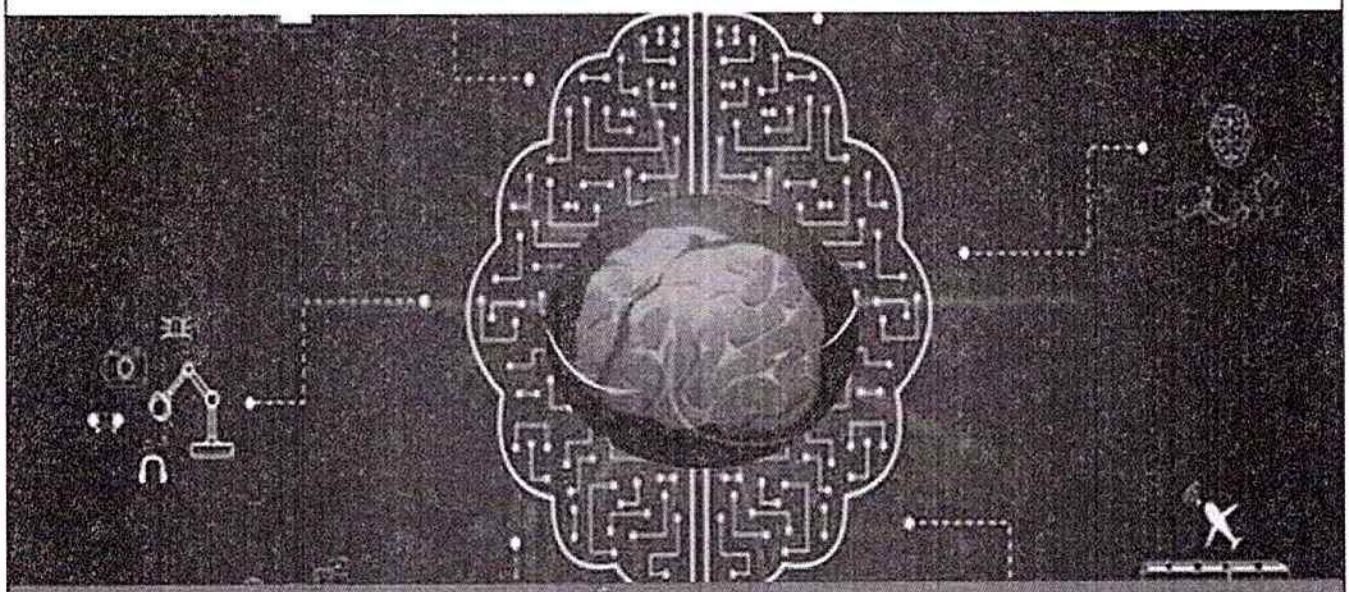

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International Conference On

Artificial Intelligence and Its Emerging Areas

-

REF. NO	TITLE OF THE PAPER AND AUTHOR(S)	Page No.
	Artificial Intelligence and Its Emerging Areas -NEC-ICAIIA 2K21	
1.	A Data Mining Based Model For Detection Of Deceitful Behaviour In Water Consumption - Tejasri Choudi.B.V.Satish, V.Naga Jyothi, K.Navya	1-5
2	A Machine Learning Framework For Prediction Of Heart Disease, Ramasetty Ramu,Kota Jagadeesh,Chanti Rajamohan Reddy,V. Mahesh Babu	6-10
3	A Supervised Learning Algorithm For Credit Card Fraud Detection, - Guggilam Sai Sri, Gummadilli Gouthami, Potluri Srividya, M. Mamatha	11-15
4	Amazon Product Review Sentiment Analysis Using Machine Learning - Ms Mohammad Arsha Sultana,P. Rakesh, M. Sandeep, G. Jagadeesh	16-20
5	An Interactive Study Of Thyroid Disease Prediction Using Machine Learning - D. Lokesh Gupta, D.Lokesh Gupta, K.V.Narasimha Reddy, D.Ramesh, V.Veerendra	21-25
6	Autoregressive Integrated Moving Average Model For Prediction Of Crypto Currency, - Pokuri Jaya Venkata Naga Sudhakar,Alladi Anil,Avula Venkata Rami Reddy,V. Mahesh Babu	26--29
7	Biometric Identification Scheme With Efficient Privacy-Preserving Mechanism For Cloud Computing Service, - Shaik Ruksana,Bandaru Naga Siva Saisuryatejaswi,Yadavalli Yedukondalu,M Mamatha	30-34
8	Bitcoin Price Prediction -Mrs R.Padmaja,K.V.D Hanisha, B Amulya, M Harika	35-38
9	Calories Burned Prediction, - Niharika Motupalli, B.Siva Kanaka Raju Shaik Mehataj , U. Jhansi Rani, T .Bhavani	39-45
10	Cartoonize Image Using Deep Learning - Gouse Mastan Vali,D.Vamsi Krishna, A.Sairam,K.S.Lakshmi Narayana	46-54
11	Children Speech Recognition Using Machine Learning Methodologies - Dr.T.V.Sai Krishna, R Venkat	55-60

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Principal
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12	Clarification Of Webbing Through Cloud Computing Technologies - Amara.S.A.L.G.Gopala Gupta,Dr. Gudapati Syam Prasad	61-65
13	Convolutional Lstm Model For Sentiment Analysis On Social Big Data - Raghuveer Pachipulusu,V.Ananth Reddy, R.Sai Kiran, T.Vignesh	66-72
14	Data Preprocessing For Efficient Prediction In Customer Relationship Management. - Patur Ganga, K.Arun	73-78
15	Design And Experimental Study Of Automatic Colour Sorting By A Robotic Arm System - T.Lakshmibai	79-82
16	Detection Of Autism Disorder Based On Eeg Signal Using Deep Learning Methods -Ranjani M.P.Supraja	83-87
17	Detection Of Online Public Shaming With Offensive Content On Twitter. - Gutta Sai Durga,Gopu Sandhya,Jonnalagadda Madhavi, Dr. S.V.N.Srinivasu	88-91
18	Detection Of Phishing Attacks Using Natural Language Processing And Logistic Regression Model. - Surubula Thirupathi Rao,Pothukuchi Mahesh Babu,Rayala Venu,V. Mahesh Babu	92-98
19	Detection Of Social Network Mental Disorders Through Mining Of Online Social Media. - Battula Venkata Ananta Mehar Gopi,Rajarapu Venu Babu,Maddineni Naveen ,Dr. S.V.N.Srinivasu	99-103
20	predections in healthy population through machine learning	104-108
21	Diabetics Prediction using Machine Learning Techniques. - Pathan Sajida, S.Amulya , V.Nandhini	109-114
22	DL-CNN Framework For Malicious Social Bots Detection. - Syed Fathima,Ponnapati Mallika,Gandru Akhilendra Chowdary,M. Mamatha	115-120
23	Door Security System Using Face Recognition -Dr A Srinivasa Rao,K.G.J.Prasanth, M. Rama Rao	121-123
24	ECG Classification With Convolutional Neural Networks - S V N Sreenivasu,T Bhargavika,B Anusha ,P Jayasri	124-129
25	Emotion Recognition From Multimodal Data(Speech, Video, Text) Based On Deep Learning Techniques D.P.Supraja	130-137

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26	Estimation Of Population Analysis - Tarun.G.Tarun.T.Purnavamsi.K.Vivekreddy	138-142
27	Eye Ball Cursor Movement Using Opencv - B.Preethi.D.Bharadwaja.B.Preethi. K.Charithra Lavanya.N.Sony	143-147
28	Face.Age And Gender Recogntion System Based on Deep Neural Networks - Gudapati Syam Prasad.K.Narendra Babu.N.Hemanth Kumar.K.Sriniivas	148-154
29	Facial Expression Recognition With Convolutional Neural Networks - S. Siva Nageswara Rao.S.Ramya. T.Anantha Lavanya	155-162
30	Fake Currency Detection. - Mr.Sk.K.M.Basha , Yalagala Hema Latha, Gatakala Venkata Sravya Bhavani, Macharla Maitili	163-167
31	Fake News Detection - Gangasani Likitha, I. Navya Sri, D. Swetha	168-175
32	Fake News Detection Using Machine Learning - Srikanth Mylapalli.Mylapalli Ramesh	176-180
33	Forest Fires Detection Using Machine Learning Algorithms - N.S.Sesi Kiran.P. Lakshmi Narayana, Sk. Mastanvali, P. Nivas	181-185
34	Functioning Of Artificial Intelligence In An Self-Driving Vehicle - A Review -Penugonda Surya Teja.None	186-189
35	Generic Recommendation Engine Using Hybrid Filtering Model - G Prabhakara Reddy,O Ramesh, Ch Anil	190-200
36	Head Motion Detection - Dr A Srinivasa Rao.M.Prathyusha, Y.Rajeswari	201-203
37	Heart Disease Prediction Using Machine Learning - Jhansi Lakshmi Manukonda ,R. V. P. S. Rekha, T. Divya, G. L. N. Jayaprada	204-208
38	House Price Prediction - Bodlapati Sowmya Reddy.M. Yamini Priya, P. Manasa	209-213
39	Image Captioning Using Deep Learning - Y E V Pratap Kumar Kuchi.M.Sireesha, G. Sai Akhil, K. Hema Sai Mourya Gupta	214-219

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NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

40	Image Classification Using Object Detection With YOLO Algorithm. Shaik Bhadhar Shareef.Putchakayala Ramesh.Angajala Anil.G. Sambasiva Rao	220-223
41	Implementation Of Video Steganography Cryptography System For Iot-Based Cloud Computing Security. - Sanivarapu Sagar Reddy.Mallavarapu Nikhil.Chevala Venkatesh.Dr. S V N Srinivasu	224-228
42	Inform Me-Family Gps Locator - Oruganti Ramesh.G Prabhakara Reddy. Ch. Anil	229-233
43	Ipl Score Prediction Using Machine Learning Methods - Rajyalakshmi Dondapati.N.Likitha.M.Anmisha	234-241
44	Liver Disease Prediction Using Machine Learning Methods - Sravana Sandhya Rani Karnati.K. Sravana Sandhya Rani, B.V.Gayithri.K.Vijayalakshmi	242-249
45	Loan Prediction System - Divya Gopavarapu.K.Manasa.A.Akhila.M.Sireesha	250-255
46	Lung Cancer Prediction - Naga Mallika Gude.M. Navya Sri. B. Sukanya	256-263
47	Map Reduced Segmentation Clustering For Big Data Analytics Using Extended K-Mean Clustering Technique - Mvs.Prasad	264-270
48	Mask R-Cnn For Fire Detection - Razeena Begum Shaik.S Yogananda Datta . M S V Manoj	271-276
49	Melanoma Prediction Using Deep Learning - Aishwarya Nallapati.D. Jaya Tejaswini. J. Prashanthi. T. Siri Chandana	277-280
50	Multilevel Hierarchy Based Privacy Preserved Profile Publishing In Cloud Environment. - Esthala Abhishek.Kambhampati Adinarayana.Battula Ramesh.G. Sambasiva Rao	281-286
51	Music Recommendation Application Based On Facial Expressions - Ms Mohammad Arsha Sultana.Abdul Saherabegum. Akhila Umma. Guthula Jayasri Sai Nikitha	287-290
52	Mutual Fund Prediction Using Machine Learning - Shaik Nannu Saidavali.N.Vinay Chandra Pal. K.Bhaskar Reddy	291-295
53	Network Coding Techniques To Store The Data Securely In Cloud. - Guru Brahmam Madala. Vijay Anand R	296-301
54	Network Spam And Fake User Detection In Online Social Networks Using Support Vector Machine. - Majeti Pavan Kalyan.Anchula Sreekanth.Ravi Mahesh Babu.G. Sambasiva Rao	302-307
55	Next Word Prediction Using Recurrent Neural Networks - Srikanth Kolisetty.B. Venkateswarlu. S. Siva Sai Kumar. T. Uday Kumar	308-313

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56	Nobel Methodologies For Immigration Of Service Oriented Architecture Based Applications To Microservice Architecture - M Madhu Sudhan, P Indupriyankaray, Aelluri Lakshmi, M Sreenandan Reddy	314-317
57	Plant Leaf Disease Detection System Using Resnet-50 - Chappa.Ramya Sai,K.Kavya,K.Meghana,A.Tulasi	318-321
58	Predicting The Survival Of Patients With Heart Failure-Machine Learning Methods - Hemalatha Tatiparthi,G.Mounika,K.Prasanthi,G.Hemavani	322-329
59	Prediction Of Agriculture Yields Using Machine Learning Algorithms. - Katepalli Sai Sravanthi,Grandhisila Venkatanagalakshmipravallika,Kollipara Harika ,M. Mamatha	330-335
60	Prediction Of Covid 19 Epidemics Using Data Analytics - S.Anil Kumar,G.Sathar	336-343
61	Prediction Of Covid Readmissions Using Machine Learning - Athukuri Lakshmi Narendra Kumar,B.V.V.N.Sai Kumar	344-347
62	Rainfall Prediction Using Machine Learning - Anusha Bhavanam,Ch. Vyshnavi, Ch.Priyanka	348-353
63	Review On Load Balancing Using Cloud Computing - J Raghunath ,A Chandra Sekhar, Shaik Razia, D Venkatesh	354-362
64	Road Safety And Vehicle Accident Prevention - G.Gayatri,G.Gayatri,K.Sugunitha	363-367
65	Sensile Soil Analyzing Application - Mathi Raasi,G.Santhi Sri,M Sravya,Shaik Khaja Mohiddin Basha	368-373
66	Sentiment Analysis Of Movie Reviews Using Ml -Mukunda Gagula,Lakshma Reddy,Sai Venkatesh,Shaik Rafi	374-377
67	Supevised Learning Models for perception of Multi-Trafic Scene	378-383
68	Smart Parking System Using Web Application. - K Razeena Begum, S Anand, K Vivek, K Manideep	384-387

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69	Social Distance Monitoring Using Deep Learning - Satuluri Vijaya Lakshmi.K.K.N. Bhuvaneswari. B.Vijaya Lakshmi	388-398
70	Stock Value Prediction Using Regression - B.Jhansi Vazram. G.Venkatrao. D.Srtinivasa Reddy. V.Ashok Kumar	399-404
71	Summarized Reviews With Attention Mechanism Using Lstm - Tahfeem Shaik.Sirajuddin.Shaikrafi	405-408
72	Supervised Learning For Fraud And Malware Detection From Android Applications. - Tunuguntla Bala Bhaskar Rao .Dronadula Narendra. Maddu Phanindra Kumar.Dr. S.V.N.Srinivasu	409-415
73	Trust-Based Privacy Preserving Photo Sharing In Online Social Networks - Mrs R.Padmaja.Sk.Shahnoor. N.Nikhila. L.Thanusha	416-419
74	Useableness And Applications Of Blockchain Technology In Cloud Computing Environment - D Venkatesh.M Vijaya Bhaskar. J Raghunath. D Raghava Raju	420-426
75	Weather Prediction - Kotha Tharun Teja.G.Ashok.K.Raviteja.N.Raviteja	427-431
76	Wholesale And Retail Store Management System - Mr K Siva Rama Krishna.Saranya Bala.Y .Triveni.V . Sai Divya	432-435

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Diabetics Prediction using Machine Learning Techniques

[1]P.Sajida, [2]G. Lakshmi Narayana, [3]S. Amulya, [4]V. Nandhini

[1,3,4]Student, Narasaraopeta Engineering College, Narasaraopet, India.

2Asst.Professor.Narasaraopeta Engineering College, Narasaraopeta,india.

[1]msajida.pathan@gmail.com, [2]lakshminarayana.gumma@gmail.com, [3]sevaamulya@gmail.com

[4]vipparla.nandini1999@gmail.com

Abstract— Diabetes is considered as one of the deadliest and chronic diseases which causes an increase in blood sugar. Many complications occur if diabetes remains untreated and unidentified. The tedious identifying process results in visiting of a patient to a diagnostic center and consulting doctor. But the rise in machine learning approaches solves this critical problem. This paper discusses the predictive analytics, six different machine learning algorithms are used in this experiment to detect diabetes at an early stage. For experiment purpose, a dataset of patient's medical record is obtained and six different machine learning algorithms are applied on the dataset. Performance and accuracy of the applied algorithms is discussed and compared. Comparison of the different machine learning techniques used in this study reveals which algorithm is best suited for prediction of diabetes. The performances of all the algorithms are evaluated on various measures like Precision and Accuracy. This paper aims to help doctors and practitioners in early prediction of diabetes using machine learning techniques.

I. Introduction

Machine learning is one of the applications of artificial intelligence (AI) that provides computers, the ability to learn automatically and improve from experience instead of explicitly programmed. It focuses on developing computer programs that can access data and use it to learn from themselves. The main aim is to allow computers to learn automatically without human intervention and also adjust actions accordingly. Diabetic Mellitus (DM) is classified as NonCommunicable Disease (NCB) and many people are suffering from it. Around 425 million people suffer from diabetes according to 2017 statistics. Approximately 2-5 million patients every year lose their lives due to diabetes. It is said that by 2045 this will rise to 629 million. Diabetics has long term complications associated with it. Also, there are high risks of various health problems for a diabetic person.A technique called, Predictive data Analysis, incorporates a variety of machine learning algorithms, data mining techniques and statistical methods that uses current and past data to find knowledge and predict future events. By applying predictive data analysis on healthcare data, significant decisions can be taken and predictions can be made. Predictive analytics can be done using machine learning and regression technique. It aims at diagnosing the disease with best possible accuracy, enhancing patient care, optimizing resources along with improving clinical outcome.With the rise of Machine Learning approaches we have the ability to find a solution to this issue, we have developed a system using data mining which has the ability to predict whether the patient has diabetes or not. Furthermore, predicting the disease early leads to treating the patients before it becomes critical. Data mining to predict whether the patient has diabetes or not. Furthermore, predicting the disease early leads to treating the patients before it becomes critical. Data mining has the ability to extract hidden knowledge from a huge amount of diabetes-related data. Because of that, it has a significant role in diabetes research, now more than ever. The aim of this research is to develop a system which can predict the diabetic risk level of a patient with a higher accuracy.

II. Literature Survey

Prediction of diabetics maintain all the input variable records. Even though, those records are not used in an efficient manner for prediction. To maintain the records in an efficient error free manner, the new system is introduced. Machine learning is one of the applications of artificial intelligence (AI) that provides computers, the ability to learn automatically and improve from experience instead of explicitly programmed. It focuses on developing computer programs that can access data and use it to learn from themselves. The main aim is to allow computers to learn automatically without human intervention and also adjust actions accordingly. In this paper designed to perform a review of their application

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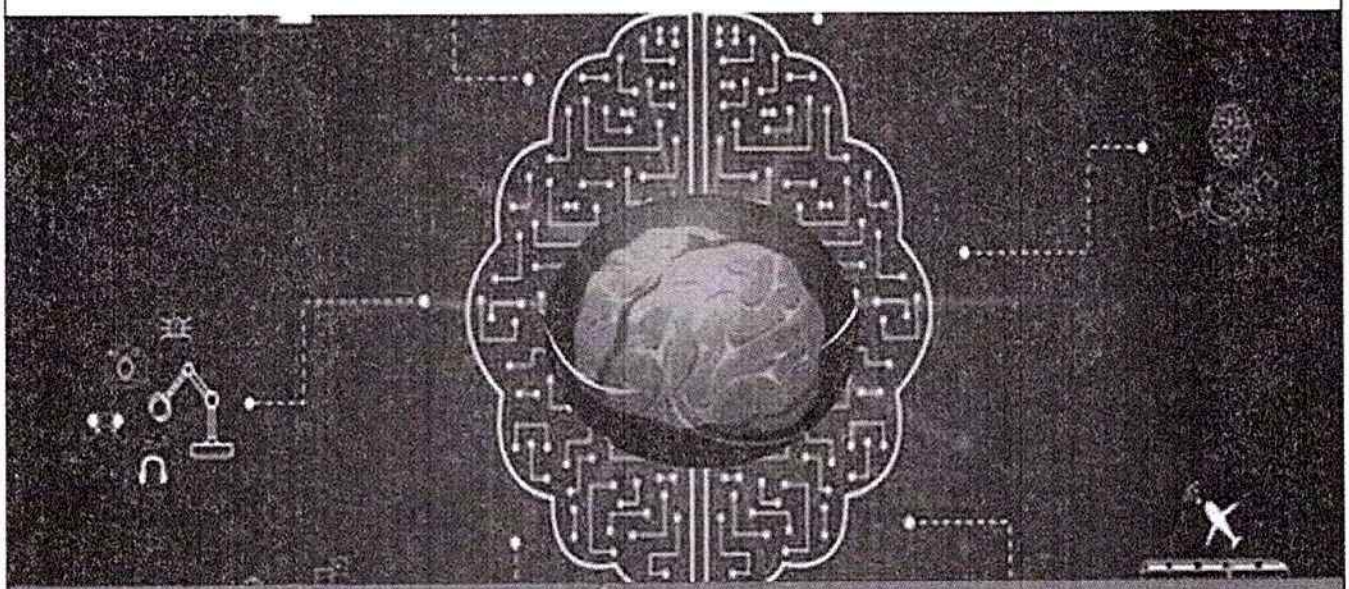

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2	A Machine Learning Framework For Prediction Of Heart Disease, Ramasetty Ramu,Kota Jagadeesh,Chanti Rajamohan Reddy,V. Mahesh Babu	6-10
3	A Supervised Learning Algorithm For Credit Card Fraud Detection, - Guggilam Sai Sri, Gummadilli Gouthami, Potluri Srividya, M. Mamatha	11-15
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10	Cartoonize Image Using Deep Learning - Gouse Mastan Vali,D.Vamsi Krishna, A.Sairam,K.S.Lakshmi Narayana	46-54
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13	Convolutional Lstm Model For Sentiment Analysis On Social Big Data - Raghuveer Pachipulusu.V.Ananth Reddy. R.Sai Kiran. T.Vignesh	66-72
14	Data Preprocessing For Efficient Prediction In Customer Relationship Management. - Patur Ganga. K.Arun	73-78
15	Design And Experimental Study Of Automatic Colour Sorting By A Robotic Arm System - T.Lakshmibai	79-82
16	Detection Of Autism Disorder Based On Eeg Signal Using Deep Learning Methods -Ranjani M.P.Supraja	83-87
17	Detection Of Online Public Shaming With Offensive Content On Twitter. - Gutta Sai Durga.Gopu Sandhya.Jonnalagadda Madhavi. Dr. S.V.N.Srinivasu	88-91
18	Detection Of Phishing Attacks Using Natural Language Processing And Logistic Regression Model. - Surubula Thirupathi Rao.Pothukuchi Mahesh Babu.Rayala Venu.V. Mahesh Babu	92-98
19	Detection Of Social Network Mental Disorders Through Mining Of Online Social Media. - Battula Venkata Ananta Mehar Gopi.Rajarapu Venu Babu.Maddineni Naveen .Dr. S.V.N.Srinivasu	99-103
20	predections in healthy population through machine learning	104-108
21	Diabetics Prediction using Machine Learning Techniques. - Pathan Sajida. S.Amulya . V.Nandhini	109-114
22	DL-CNN Framework For Malicious Social Bots Detection. - Syed Fathima.Ponnapati Mallika.Gandru Akhilendra Chowdary.M. Mamatha	115-120
23	Door Security System Using Face Recognition -Dr A Srinivasa Rao.K.G.J.Prasanth. M. Rama Rao	121-123
24	ECG Classification With Convolutional Neural Networks - S V N Sreenivasu.T Bhargavika.B Anusha .P Jayasri	124-129
25	Emotion Recognition From Multimodal Data(Speech. Video. Text) Based On Deep Learning Techniques D.P.Supraja	130-137

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26	Estimation Of Population Analysis - Tarun.G.Tarun.T.Purnavamsi.K.Vivekreddy	138-142
27	Eye Ball Cursor Movement Using Opencv - B.Preethi.D.Bharadwaja.B.Preethi. K.Charithra Lavanya.N.Sony	143-147
28	Face.Age And Gender Recogntion System Based on Deep Neural Networks - Gudapati Syam Prasad.K.Narendra Babu.N.Hemanth Kumar.K.Sriniivas	148-154
29	Facial Expression Recognition With Convolutional Neural Networks - S. Siva Nageswara Rao.S.Ramya. T.Anantha Lavanya	155-162
30	Fake Currency Detection. - Mr.Sk.K.M.Basha , Yalagala Hema Latha, Gatakala Venkata Sravya Bhavani. Macharla Maitili	163-167
31	Fake News Detection - Gangasani Likitha. I. Navya Sri, D. Swetha	168-175
32	Fake News Detection Using Machine Learning - Srikanth Mylapalli.Mylapalli Ramesh	176-180
33	Forest Fires Detection Using Machine Learning Algorithms - N.S.Sesi Kiran.P. Lakshmi Narayana, Sk. Mastanvali, P. Nivas	181-185
34	Functioning Of Artificial Intelligence In An Self-Driving Vehicle - A Review -Penugonda Surya Teja.None	186-189
35	Generic Recommendation Engine Using Hybrid Filtering Model - G Prabhakara Reddy,O Ramesh, Ch Anil	190-200
36	Head Motion Detection - Dr A Srinivasa Rao.M.Prathyusha, Y.Rajeswari	201-203
37	Heart Disease Prediction Using Machine Learning - Jhansi Lakshmi Manukonda ,R. V. P. S. Rekha, T. Divya, G. L. N. Jayaprada	204-208
38	House Price Prediction - Bodlapati Sowmya Reddy.M. Yamini Priya. P. Manasa	209-213
39	Image Captioning Using Deep Learning - Y E V Pratap Kumar Kuchi.M.Sireesha. G. Sai Akhil, K. Hema Sai Mourya Gupta	214-219

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Principal
NARASARAOPETA ENGINEERING COLLEGE
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NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

40	Image Classification Using Object Detection With YOLO Algorithm, Shaik Bhadhar Shareef.Putchakayala Ramesh.Angajala Anil.G. Sambasiva Rao	220-223
41	Implementation Of Video Steganography Cryptography System For Iot-Based Cloud Computing Security. - Sanivarapu Sagar Reddy.Mallavarapu Nikhil.Chevala Venkatesh.Dr. S.V.N Srinivasu	224-228
42	Inform Me-Family Gps Locator - Oruganti Ramesh.G Prabhakara Reddy. Ch. Anil	229-233
43	Ipl Score Prediction Using Machine Learning Methods - Rajyalakshmi Dondapati.N.Likitha.M.Anmisha	234-241
44	Liver Disease Prediction Using Machine Learning Methods - Sravana Sandhya Rani Karnati.K. Sravana Sandhya Rani, B.V.Gayithri.K.Vijayalakshmi	242-249
45	Loan Prediction System - Divya Gopavarapu.K.Manasa.A.Akhila.M.Sireesha	250-255
46	Lung Cancer Prediction - Naga Mallika Gude.M. Navya Sri, B. Sukanya	256-263
47	Map Reduced Segmentation Clustering For Big Data Analytics Using Extended K-Mean Clustering Technique - Mvs.Prasad	264-270
48	Mask R-Cnn For Fire Detection - Razeena Begum Shaik.S Yogananda Datta . M S V Manoj	271-276
49	Melanoma Prediction Using Deep Learning - Aishwarya Nallapati.D. Jaya Tejaswini, J. Prashanthi, T. Siri Chandana	277-280
50	Multilevel Hierarchy Based Privacy Preserved Profile Publishing In Cloud Environment. - Esthala Abhishek.Kambhampati Adinarayana.Battula Ramesh.G. Sambasiva Rao	281-286
51	Music Recommendation Application Based On Facial Expressions - Ms Mohammad Arsha Sultana.Abdul Saherabegum, Akhila Umma, Guthula Jayasri Sai Nikitha	287-290
52	Mutual Fund Prediction Using Machine Learning - Shaik Nannu Saidavali.N.Vinay Chandra Pal, K.Bhaskar Reddy	291-295
53	Network Coding Techniques To Store The Data Securely In Cloud, - Guru Brahmam Madala, Vijay Anand R	296-301
54	Network Spam And Fake User Detection In Online Social Networks Using Support Vector Machine. - Majeti Pavan Kalyan.Anchula Sreekanth.Ravi Mahesh Babu.G. Sambasiva Rao	302-307
55	Next Word Prediction Using Recurrent Neural Networks - Srikanth Kolisetty.B. Venkateswarlu, S. Siva Sai Kumar, T. Uday Kumar	308-313

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57	Plant Leaf Disease Detection System Using Resnet-50 - Chappa.Ramya Sai,K.Kavya,K.Meghana,A.Tulasi	318-321
58	Predicting The Survival Of Patients With Heart Failure-Machine Learning Methods - Hemalatha Tatiparthi,G.Mounika,K.Prasanthi,G.Hemavani	322-329
59	Prediction Of Agriculture Yields Using Machine Learning Algorithms. - Katepalli Sai Sravanthi,Grandhisila Venkatanagalakshmipravallika,Kollipara Harika ,M. Mamatha	330-335
60	Prediction Of Covid 19 Epidemics Using Data Analytics - S.Anil Kumar,G.Sathar	336-343
61	Prediction Of Covid Readmissions Using Machine Learning - Athukuri Lakshmi Narendra Kumar,B.V.V.N.Sai Kumar	344-347
62	Rainfall Prediction Using Machine Learning - Anusha Bhavanam,Ch. Vyshnavi, Ch.Priyanka	348-353
63	Review On Load Balancing Using Cloud Computing - J Raghunath ,A Chandra Sekhar, Shaik Razia, D Venkatesh	354-362
64	Road Safety And Vehicle Accident Prevention - G.Gayatri,G.Gayatri,K.Sugunitha	363-367
65	Sensile Soil Analyzing Application - Mathi Raasi,G.Santhi Sri,M Sravya,Shaik Khaja Mohiddin Basha	368-373
66	Sentiment Analysis Of Movie Reviews Using Ml -Mukunda Gagula,Lakshma Reddy,Sai Venkatesh,Shaik Rafi	374-377
67	Supevised Learning Models for perception of Multi-Trafic Scene	378-383
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70	Stock Value Prediction Using Regression - B.Jhansi Vazram, G.Venkatrao, D.Srtinivasa Reddy, V.Ashok Kumar	399-404
71	Summarized Reviews With Attention Mechanism Using Lstm - Tahfeem Shaik,Sirajuddin,Shaikrafi	405-408
72	Supervised Learning For Fraud And Malware Detection From Android Applications. - Tunuguntla Bala Bhaskar Rao ,Dronadula Narendra, Maddu Phanindra Kumar,Dr. S.V.N.Srinivasu	409-415
73	Trust-Based Privacy Preserving Photo Sharing In Online Social Networks - Mrs R.Padmaja,Sk.Shahnoor, N.Nikhila, L.Thanusha	416-419
74	Useableness And Applications Of Blockchain Technology In Cloud Computing Environment - D Venkatesh,M Vijaya Bhaskar, J Raghunath, D Raghava Raju	420-426
75	Weather Prediction - Kotha Tharun Teja,G.Ashok.K.Raviteja,N.Raviteja	427-431
76	Wholesale And Retail Store Management System - Mr K Siva Rama Krishna,Saranya Bala.Y ,Triveni.V , Sai Divya	432-435

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35

Predictions in Healthy Population through Machine Learning

V.Pavankalyan[1] K.V.NarasimhaReddy[2], M.Subhani[3], N.Vijaykrishna[4]

[1]*Student,Narasaraopeta Engineering college,Narasaraopeta,India,Pavankalyan1074@gmail.com*

[2]*Asst.Professor.Narasaraopeta Engineering College,Narasaraopeta,india.*

[3]*Student,Narasaraopeta Engineering college,Narasaraopeta,India,Subhaniorange78@gmail.com*

[4]*Student,Narasaraopeta Engineering college,Narasaraopeta,India,Vijaykrishnacse003@gmail.com*

Abstract—In this paper, we revisit the data of the San Antonio Heart Study, and employ machine learning to predict the future development of type-2 diabetes. To build the prediction model, we use the support vector machines and ten features that are well- known in the literature as strong predictors of future diabetes.Due to the unbalanced nature of the dataset in terms of the class labels, we use 10-fold cross-validation to train the model and a hold-out set to validate it. The results of this study show a validation accuracy of 84.1% with a recall rate of 81.1% averaged over 100 iterations. The outcomes of this study can help in identifying the population that is at high risk of developing type-2 diabetes in the future.

Index Terms—Disease Prediction, support vector machine, type 2 diabetes.

1.Introduction

The global incidence of diabetes was estimated at 422 million in the year 2014, and its prevalence among the adult population has seen in increase from 4.7 % in 1980 to 8.5 % in 2014 [1]. In 2015 alone, an estimated 1.6 million deaths worldwide were directly attributed to diabetes. In addition, a diabetic patient is at a greater risk of developing cardiovascular disease, visual impairment and undergo limb amputations, as compared to a non-diabetic person. Due to the substantial socio-economic burdens not only to the effected families but the local health- care system as well, the early detection, intervention and prevention of diabetes has become a paramount global concern related to health

I.METHODOLOGY

A. San Antonio Heart Study

We extracted the dataset from an epidemiological population study of risk factors related to diabetes and cardiovascular diseases, known as the San Antonio Heart Study (SAHS) [8], [9]. The study comprised of 5,158 men and non-pregnant women of Mexican-American and non-Hispanic white ethnicity, aged between 25 and 64 years and residing in San Antonio, Texas. All the protocols applied in the study were

Pregnancies	Glucose	BloodPressure	SkinThickness	Insulin	BMI	DiabetesPedigreeFunction	Age	Outcome
1	111	62	13	0	33.6	0.127	47	1
1	92	62	13	105	30.1	0.141	23	0
1	143	8	7	0	44.1	0.63	31	1
1	147	60	42	250	42.3	0.365	24	1
1	139	62	41	480	40.7	0.536	21	0
0	173	78	32	265	46.5	1.159	58	0
4	99	72	17	0	25.6	0.294	28	0
8	154	78	7	0	32.1	0.443	67	0
1	11	68	23	66	30.3	0.629	24	0
1	13	50	17	0	32.3	0.232	42	0
4	23	60	13	0	32.3	0.343	33	0
4	123	70	13	127	28.9	1.039	45	1
1	30	8	7	0	1	0.396	22	0
6	166	74	0	0	26.6	0.304	66	0
5	116	74	7	0	25	0.201	30	0
3	11	80	15	36	32.1	0.661	25	0
4	135	70	23	135	25.1	0.203	33	1
2	127	70	12	105	28.9	0.766	22	0
1	79	60	42	48	43.5	0.678	23	0
1	96	74	18	67	33.6	0.997	43	0
5	166	72	19	175	25.8	0.587	51	1
0	118	84	47	230	45.8	0.551	31	1
1	107	74	30	100	33.6	0.404	23	0
1	103	30	38	83	43.3	0.183	33	0
1	115	70	30	96	34.6	0.529	32	1
3	126	88	41	235	39.3	0.704	27	0
8	99	84	0	0	35.4	0.388	50	0
7	196	90	0	0	39.8	0.451	41	1
9	119	80	35	0	29	0.263	29	1
11	143	94	33	146	36.6	0.254	51	1
10	125	70	26	115	31.1	0.205	41	1
7	147	76	0	0	39.4	0.257	43	1
1	97	66	15	140	23.2	0.487	22	0
13	145	82	19	110	22.2	0.245	57	0
5	117	92	0	0	34.1	0.337	38	0
5	109	75	26	0	36	0.546	60	0
3	158	76	36	245	31.6	0.851	28	1
3	88	58	11	54	24.8	0.267	22	0
6	92	92	0	0	19.9	0.188	28	0
10	122	78	31	0	27.6	0.512	45	0

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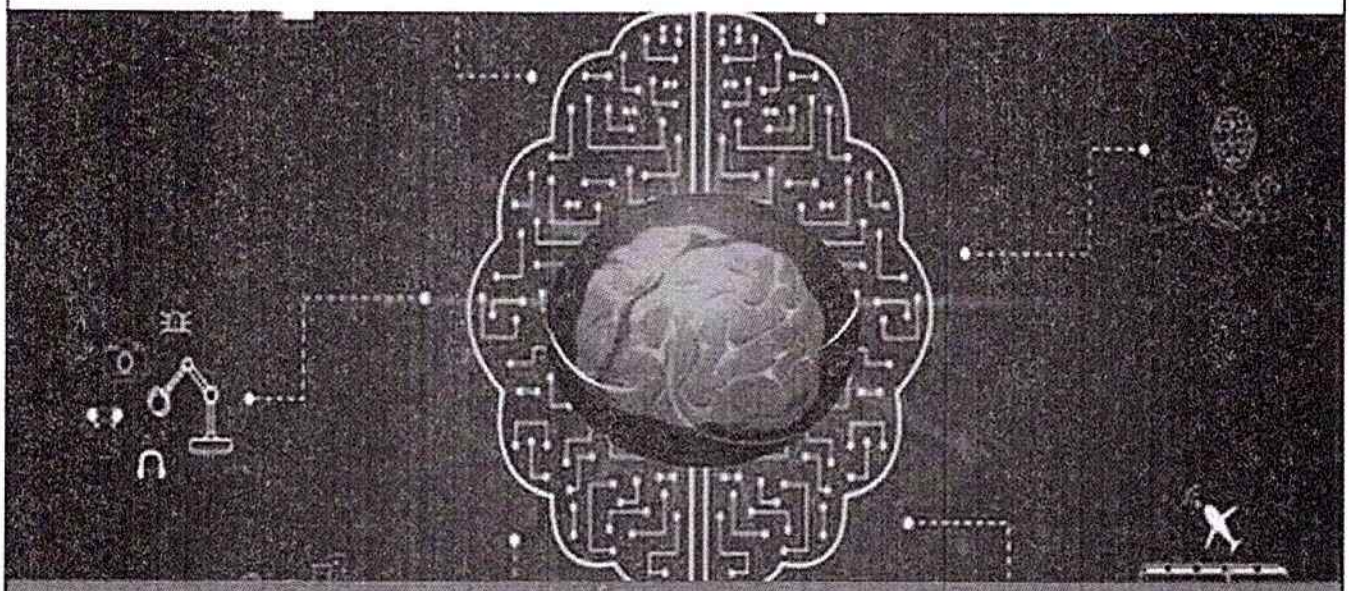

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International Conference On

Artificial Intelligence and Its Emerging Areas

-

REF. NO	TITLE OF THE PAPER AND AUTHOR(S)	Page No.
	Artificial Intelligence and Its Emerging Areas -NEC-ICAIIA 2K21	
1.	A Data Mining Based Model For Detection Of Deceitful Behaviour In Water Consumption - Tejasri Choudi,B.V.Satish, V.Naga Jyothi, K.Navya	1-5
2	A Machine Learning Framework For Prediction Of Heart Disease. Ramasetty Ramu,Kota Jagadeesh,Chanti Rajamohan Reddy,V. Mahesh Babu	6-10
3	A Supervised Learning Algorithm For Credit Card Fraud Detection. - Guggilam Sai Sri, Gummadilli Gouthami, Potluri Srividya, M. Mamatha	11-15
4	Amazon Product Review Sentiment Analysis Using Machine Learning - Ms Mohammad Arsha Sultana,P. Rakesh, M. Sandeep, G. Jagadeesh	16-20
5	An Interactive Study Of Thyroid Disease Prediction Using Machine Learning - D. Lokesh Gupta, D.Lokesh Gupta, K.V.Narasimha Reddy, D.Ramesh, V.Veerendra	21-25
6	Autoregressive Integrated Moving Average Model For Prediction Of Crypto Currency. - Pokuri Jaya Venkata Naga Sudhakar,Alladi Anil,Avula Venkata Rami Reddy,V. Mahesh Babu	26--29
7	Biometric Identification Scheme With Efficient Privacy-Preserving Mechanism For Cloud Computing Service. - Shaik Ruksana,Bandaru Naga Siva Satsuryatejaswi,Yadavalli Yedukondalu,M Mamatha	30-34
8	Bitcoin Price Prediction -Mrs R.Padmaja,K.V.D Hanisha, B Amulya, M Harika	35-38
9	Calories Burned Prediction, - Niharika Motupalli, B.Siva Kanaka Raju Shaik Mehataj , U. Jhansi Rani, T .Bhavani	39-45
10	Cartoonize Image Using Deep Learning - Gouse Mastan Vali,D.Vamsi Krishna, A.Sairam,K.S.Lakshmi Narayana	46-54
11	Children Speech Recognition Using Machine Learning Methodologies - Dr.T.V.Sai Krishna, R Venkat	55-60

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Guntur (Dist.), A.P.

12	Clarification Of Webbing Through Cloud Computing Technologies - Amara.S.A.L.G.Gopala Gupta,Dr. Gudapati Syam Prasad	61-65
13	Convolutional Lstm Model For Sentiment Analysis On Social Big Data - Raghuveer Pachipulusu,V.Ananth Reddy, R.Sai Kiran, T.Vignesh	66-72
14	Data Preprocessing For Efficient Prediction In Customer Relationship Management, - Patur Ganga, K.Arun	73-78
15	Design And Experimental Study Of Automatic Colour Sorting By A Robotic Arm System - T.Lakshmibai	79-82
16	Detection Of Autism Disorder Based On Eeg Signal Using Deep Learning Methods -Ranjani M.P.Supraja	83-87
17	Detection Of Online Public Shaming With Offensive Content On Twitter, - Gutta Sai Durga,Gopu Sandhya,Jonnalagadda Madhavi, Dr. S.V.N.Srinivasu	88-91
18	Detection Of Phishing Attacks Using Natural Language Processing And Logistic Regression Model, - Surubula Thirupathi Rao,Pothukuchi Mahesh Babu,Rayala Venu,V. Mahesh Babu	92-98
19	Detection Of Social Network Mental Disorders Through Mining Of Online Social Media, - Battula Venkata Ananta Mehar Gopi,Rajarapu Venu Babu,Maddineni Naveen ,Dr. S.V.N.Srinivasu	99-103
20	predections in healthy population through machine learning	104-108
21	Diabetics Prediction using Machine Learning Techniques, - Pathan Sajida, S.Amulya , V.Nandhini	109-114
22	DL-CNN Framework For Malicious Social Bots Detection, - Syed Fathima,Ponnapati Mallika,Gandru Akhilendra Chowdary,M. Mamatha	115-120
23	Door Security System Using Face Recognition -Dr A Srinivasa Rao,K.G.J.Prasanth, M. Rama Rao	121-123
24	ECG Classification With Convolutional Neural Networks - S V N Sreenivasu,T Bhargavika,B Anusha ,P Jayasri	124-129
25	Emotion Recognition From Multimodal Data(Speech, Video, Text) Based On Deep Learning Techniques D.P.Supraja	130-137

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26	Estimation Of Population Analysis - Tarun.G.Tarun.T.Purnavamsi.K.Vivekreddy	138-142
27	Eye Ball Cursor Movement Using Opencv - B.Preethi.D.Bharadwaja.B.Preethi. K.Charithra Lavanya.N.Sony	143-147
28	Face.Age And Gender Recogntion System Based on Deep Neural Networks - Gudapati Syam Prasad.K.Narendra Babu.N.Hemanth Kumar.K.Sriniivas	148-154
29	Facial Expression Recognition With Convolutional Neural Networks - S. Siva Nageswara Rao.S.Ramya. T.Anantha Lavanya	155-162
30	Fake Currency Detection. - Mr.Sk.K.M.Basha , Yalagala Hema Latha. Gatakala Venkata Sravya Bhavani. Macharla Maitili	163-167
31	Fake News Detection - Gangasani Likitha. I. Navya Sri. D. Swetha	168-175
32	Fake News Detection Using Machine Learning - Srikanth Mylapalli.Mylapalli Ramesh	176-180
33	Forest Fires Detection Using Machine Learning Algorithms - N.S.Sesi Kiran.P. Lakshmi Narayana. Sk. Mastanvali. P. Nivas	181-185
34	Functioning Of Artificial Intelligence In An Self-Driving Vehicle - A Review -Penugonda Surya Teja.None	186-189
35	Generic Recommendation Engine Using Hybrid Filtering Model - G Prabhakara Reddy.O Ramesh. Ch Anil	190-200
36	Head Motion Detection - Dr A Srinivasa Rao.M.Prathyusha. Y.Rajeswari	201-203
37	Heart Disease Prediction Using Machine Learning - Jhansi Lakshmi Manukonda ,R. V. P. S. Rekha. T. Divya. G. L. N. Jayaprada	204-208
38	House Price Prediction - Bodlapati Sowmya Reddy.M. Yamini Priya. P. Manasa	209-213
39	Image Captioning Using Deep Learning - Y E V Pratap Kumar Kuchi.M.Sireesha. G. Sai Akhil. K. Hema Sai Mourya Gupta	214-219

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41	Implementation Of Video Steganography Cryptography System For Iot-Based Cloud Computing Security. - Sanivarapu Sagar Reddy,Mallavarapu Nikhil,Chevala Venkatesh,Dr. S.V.N Srinivasu	224-228
42	Inform Me-Family Gps Locator - Oruganti Ramesh,G Prabhakara Reddy. Ch. Anil	229-233
43	Ipl Score Prediction Using Machine Learning Methods - Rajyalakshmi Dondapati,N.Likitha,M.Anmisha	234-241
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46	Lung Cancer Prediction - Naga Mallika Gude,M. Navya Sri, B. Sukanya	256-263
47	Map Reduced Segmentation Clustering For Big Data Analytics Using Extended K-Mean Clustering Technique - Mvs.Prasad	264-270
48	Mask R-Cnn For Fire Detection - Razeena Begum Shaik,S Yogananda Datta , M S V Manoj	271-276
49	Melanoma Prediction Using Deep Learning - Aishwarya Nallapati,D. Jaya Tejaswini, J. Prashanthi, T. Siri Chandana	277-280
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51	Music Recommendation Application Based On Facial Expressions - Ms Mohammad Arsha Sultana,Abdul Saherabegum, Akhila Umma, Guthula Jayasri Sai Nikitha	287-290
52	Mutual Fund Prediction Using Machine Learning - Shaik Nannu Saidavali,N.Vinay Chandra Pal, K.Bhaskar Reddy	291-295
53	Network Coding Techniques To Store The Data Securely In Cloud. - Guru Brahmam Madala, Vijay Anand R	296-301
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55	Next Word Prediction Using Recurrent Neural Networks - Srikanth Kolisetty,B. Venkateswarlu, S. Siva Sai Kumar, T. Uday Kumar	308-313

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57	Plant Leaf Disease Detection System Using Resnet-50 - Chappa.Ramya Sai,K.Kavya,K.Meghana,A.Tulasi	318-321
58	Predicting The Survival Of Patients With Heart Failure-Machine Learning Methods - Hemalatha Tatiparthi,G.Mounika,K.Prasanthi,G.Hemavani	322-329
59	Prediction Of Agriculture Yields Using Machine Learning Algorithms. - Katepalli Sai Sravanthi,Grandhisila Venkatanagalakshmipravallika,Kollipara Harika ,M. Mamatha	330-335
60	Prediction Of Covid 19 Epidemics Using Data Analytics - S.Anil Kumar,G.Sathar	336-343
61	Prediction Of Covid Readmissions Using Machine Learning - Athukuri Lakshmi Narendra Kumar,B.V.V.N.Sai Kumar	344-347
62	Rainfall Prediction Using Machine Learning - Anusha Bhavanam,Ch. Vyshnavi, Ch.Priyanka	348-353
63	Review On Load Balancing Using Cloud Computing - J Raghunath ,A Chandra Sekhar, Shaik Razia, D Venkatesh	354-362
64	Road Safety And Vehicle Accident Prevention - G.Gayatri,G.Gayatri,K.Sugunitha	363-367
65	Sensile Soil Analyzing Application - Mathi Raasi,G.Santhi Sri,M Sravya,Shaik Khaja Mohiddin Basha	368-373
66	Sentiment Analysis Of Movie Reviews Using Ml -Mukunda Gagula,Lakshma Reddy,Sai Venkatesh,Shaik Rafi	374-377
67	Supevised Learning Models for perception of Multi-Trafic Scene	378-383
68	Smart Parking System Using Web Application, - K Razeena Begum, S Anand, K Vivek, K Manideep	384-387

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70	Stock Value Prediction Using Regression - B.Jhansi Vazram. G.Venkatrao. D.Srtinivasa Reddy. V.Ashok Kumar	399-404
71	Summarized Reviews With Attention Mechanism Using Lstm - Tahfeem Shaik,Sirajuddin,Shaikrafi	405-408
72	Supervised Learning For Fraud And Malware Detection From Android Applications. - Tunuguntla Bala Bhaskar Rao .Dronadula Narendra. Maddu Phanindra Kumar.Dr. S.V.N.Srinivasu	409-415
73	Trust-Based Privacy Preserving Photo Sharing In Online Social Networks - Mrs R.Padmaja,Sk.Shahnoor. N.Nikhila. L.Thanusha	416-419
74	Useableness And Applications Of Blockchain Technology In Cloud Computing Environment - D Venkatesh,M Vijaya Bhaskar. J Raghunath. D Raghava Raju	420-426
75	Weather Prediction - Kotha Tharun Teja,G.Ashok,K.Raviteja,N.Raviteja	427-431
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CSE 2021

Forest fires detection using machine learning algorithms

N. S. Sesi Kiran[a], P. Lakshmi Narayana[b], Sk. Masthanvali[c], P. Nivas[d]
Department of CSE, Narasaraopet Engineering College, Narasaraopet, A.P, India
[a]seetaramsesikiran@gmail.com
[c]shaikmastanvali135@gmail.com
[d]nivas.pachipala1999@gmail.com
Asst. Prof, Department of CSE, Narasaraopet Engineering College, Narasaraopet, A.P, India
[b]lakshmi.778@gmail.com

***Abstract*-- Forest fires have become one of the most frequently occurring disasters in recent times. Large acres of forest area are getting destroyed due to these wildfires. One of the main reasons behind the occurrence of forest fires is global warming which attributes to the increase in average temperature of the earth. The other reasons are due to lightning, during thunderstorms, and human negligence. Each year an average of 1.2 million acres of forest get destroyed due to the wildfires. In India forest fires have increased by 125% between the years 2016 and 2018. Forest fires are major environmental issue, creating economical and ecological damage. While endangering human lives. Fast detection is a key element for controlling such phenomenon. To achieve this, we are using meteorological data like temperature, wind. These are known to influence forest fires and several fire indexes, such as forest fire weather index (FWI). The best configuration of meteorological data that we are using in our project are temperature, relative humidity, wind, rain. By using this data, we predict whether the fire will be occurred or not.**

***Keywords*-- Machine learning, Classification, SVM, Random Forest, KNN, Decision Trees, Logistic regression.**

I. INTRODUCTION

Forest fire have become one of the most frequently occurring disasters in recent times. Large acres of forest area are getting destroyed due to these wildfires. One of the main reasons behind the occurrence of forest fires is global warming which attributes to the increase in average temperature of the earth. The other reasons are due to lightning, during thunderstorms, and human negligence. Each year an average of 1.2 million acres of forest get destroyed due to the wildfires. In India forest fires have increased by 125% between the years 2016 and2018.

Forest fires can lead to deforestation which has a lot of negative impact on the human society. The usual process of dealing with wildfires is where the satellite images of the forest fires are captured and the authorities are notified by its occurrence and the measures are taken to stop it. But the above process will happen only after the occurrence of the wildfires and before even attempting to take the first step of action there will already be few acres of forest area destroyed. The whole process should be known in advance and should be mitigated. The process should not only be time efficient but also be cost efficient.

Data mining is one such efficient approach in which the forest fires can be predicted based on their past occurrences. Data mining requires an authentic and a clean set of data for prediction. If the dataset is not clean or if there are many unknown values then those values must be taken care of before we use them for modelling. The dataset present in the UCI Machine learning repository about the forest fires is used for prediction.

II. LITERATURE SURVEY

In the recent years, there has been a lot of work done to detect the forest fires. Many authors have used various kinds of data mining technique. The authors proved to obtain an adequate approach and certainty to detect the forest fires by the work that includes various datasets and algorithms linked with the work that is to be done in the future perspective to accomplish effective and better results. The intent of the paper interprets various techniques of data mining mechanisms and the statistical attributes that is been popularized in the latter years for interpretation of forest fire detection with the certainty by various authors to attain various prospects and for various approaches.

Significant causes of forest fire are human-based and nature-based. Human-based forest fires are Arson (human-made fire), Smoking and throwing cigarettes, Sparks in power lines, explosive or fire use during hunting, picnic fires, shepherd fires, stubble burning. Nature-based forest fires are

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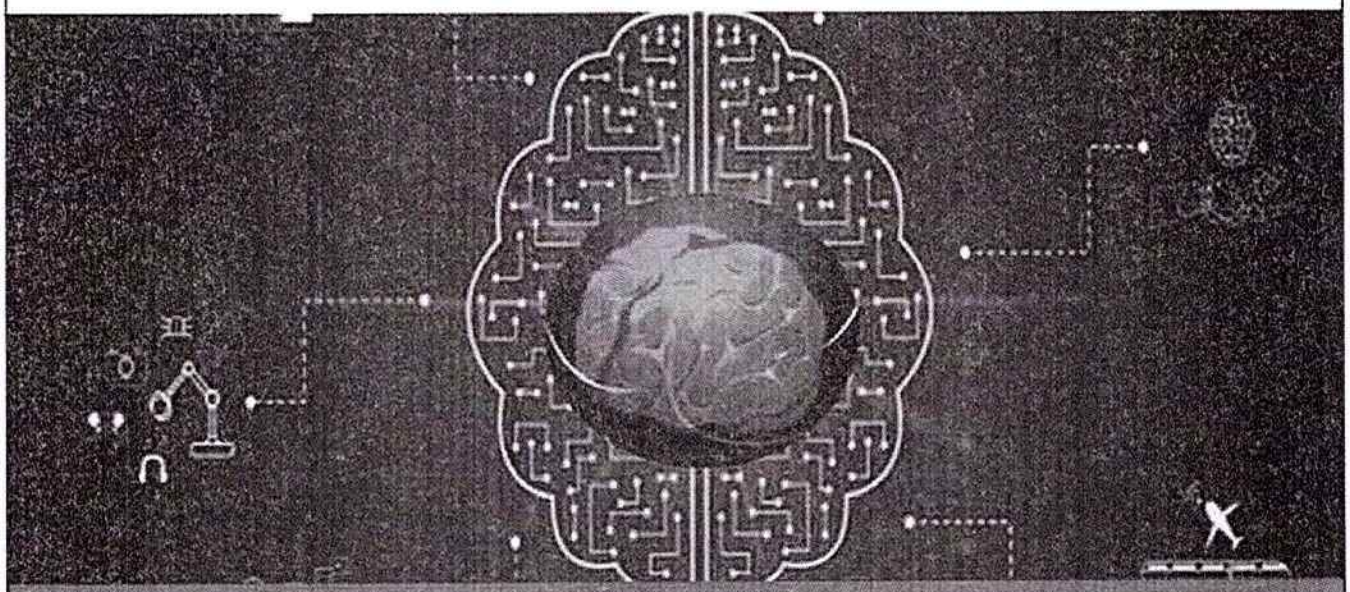

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-

REF. NO	TITLE OF THE PAPER AND AUTHOR(S)	Page No.
	Artificial Intelligence and Its Emerging Areas -NEC-ICAIIA 2K21	
1.	A Data Mining Based Model For Detection Of Deceitful Behaviour In Water Consumption - Tejasri Choudi,B.V.Satish, V.Naga Jyothi, K.Navya	1-5
2	A Machine Learning Framework For Prediction Of Heart Disease. Ramasetty Ramu,Kota Jagadeesh,Chanti Rajamohan Reddy,V. Mahesh Babu	6-10
3	A Supervised Learning Algorithm For Credit Card Fraud Detection. - Guggilam Sai Sri, Gummadilli Gouthami, Potluri Srividya, M. Mamatha	11-15
4	Amazon Product Review Sentiment Analysis Using Machine Learning - Ms Mohammad Arsha Sultana,P. Rakesh, M. Sandeep, G. Jagadeesh	16-20
5	An Interactive Study Of Thyroid Disease Prediction Using Machine Learning - D. Lokesh Gupta, D.Lokesh Gupta, K.V.Narasimha Reddy, D.Ramesh, V.Veerendra	21-25
6	Autoregressive Integrated Moving Average Model For Prediction Of Crypto Currency. - Pokuri Jaya Venkata Naga Sudhakar,Alladi Anil,Avula Venkata Rami Reddy,V. Mahesh Babu	26--29
7	Biometric Identification Scheme With Efficient Privacy-Preserving Mechanism For Cloud Computing Service. - Shaik Ruksana,Bandaru Naga Siva Saisuryatejaswi,Yadavalli Yedukondalu,M Mamatha	30-34
8	Bitcoin Price Prediction -Mrs R.Padmaja,K.V.D Hanisha, B Amulya, M Harika	35-38
9	Calories Burned Prediction. - Niharika Motupalli, B.Siva Kanaka Raju Shaik Mehataj , U. Jhansi Rani, T .Bhavani	39-45
10	Cartoonize Image Using Deep Learning - Gouse Mastan Vali,D.Vamsi Krishna, A.Sairam,K.S.Lakshmi Narayana	46-54
11	Children Speech Recognition Using Machine Learning Methodologies - Dr.T.V.Sai Krishna, R Venkat	55-60

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12	Clarification Of Webbing Through Cloud Computing Technologies - Amara.S.A.L.G.Gopala Gupta,Dr. Gudapati Syam Prasad	61-65
13	Convolutional Lstm Model For Sentiment Analysis On Social Big Data - Raghuveer Pachipulusu,V.Ananth Reddy. R.Sai Kiran. T.Vignesh	66-72
14	Data Preprocessing For Efficient Prediction In Customer Relationship Management. - Patur Ganga. K.Arun	73-78
15	Design And Experimental Study Of Automatic Colour Sorting By A Robotic Arm System - T.Lakshmibai	79-82
16	Detection Of Autism Disorder Based On Eeg Signal Using Deep Learning Methods -Ranjani M.P.Supraja	83-87
17	Detection Of Online Public Shaming With Offensive Content On Twitter. - Gutta Sai Durga.Gopu Sandhya,Jonnalagadda Madhavi. Dr. S.V.N.Srinivasu	88-91
18	Detection Of Phishing Attacks Using Natural Language Processing And Logistic Regression Model. - Surubula Thirupathi Rao.Pothukuchi Mahesh Babu,Rayala Venu.V. Mahesh Babu	92-98
19	Detection Of Social Network Mental Disorders Through Mining Of Online Social Media. - Battula Venkata Ananta Mehar Gopi,Rajarapu Venu Babu,Maddineni Naveen ,Dr. S.V.N.Srinivasu	99-103
20	predections in healthy population through machine learning	104-108
21	Diabetics Prediction using Machine Learning Techniques. - Pathan Sajida. S.Amulya . V.Nandhini	109-114
22	DL-CNN Framework For Malicious Social Bots Detection. - Syed Fathima,Ponnapati Mallika.Gandru Akhilendra Chowdary.M. Mamatha	115-120
23	Door Security System Using Face Recognition -Dr A Srinivasa Rao.K.G.J.Prasanth. M. Rama Rao	121-123
24	ECG Classification With Convolutional Neural Networks - S V N Sreenivasu.T Bhargavika,B Anusha ,P Jayasri	124-129
25	Emotion Recognition From Multimodal Data(Speech. Video. Text) Based On Deep Learning Techniques D.P.Supraja	130-137

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26	Estimation Of Population Analysis - Tarun.G.Tarun.T.Purnavamsi.K.Vivekreddy	138-142
27	Eye Ball Cursor Movement Using Opencv - B.Preethi.D.Bharadwaja.B.Preethi. K.Charithra Lavanya.N.Sony	143-147
28	Face.Age And Gender Recogntion System Based on Deep Neural Networks - Gudapati Syam Prasad.K.Narendra Babu.N.Hemanth Kumar.K.Sriniivas	148-154
29	Facial Expression Recognition With Convolutional Neural Networks - S. Siva Nageswara Rao.S.Ramya. T.Anantha Lavanya	155-162
30	Fake Currency Detection. - Mr.Sk.K.M.Basha , Yalagala Hema Latha. Gatakala Venkata Sravya Bhavani. Macharla Maitili	163-167
31	Fake News Detection - Gangasani Likitha. I. Navya Sri. D. Swetha	168-175
32	Fake News Detection Using Machine Learning - Srikanth Mylapalli.Mylapalli Ramesh	176-180
33	Forest Fires Detection Using Machine Learning Algorithms - N.S.Sesi Kiran.P. Lakshmi Narayana. Sk. Mastanvali. P. Nivas	181-185
34	Functioning Of Artificial Intelligence In An Self-Driving Vehicle - A Review -Penugonda Surya Teja.None	186-189
35	Generic Recommendation Engine Using Hybrid Filtering Model - G Prabhakara Reddy,O Ramesh. Ch Anil	190-200
36	Head Motion Detection - Dr A Srinivasa Rao.M.Prathyusha. Y.Rajeswari	201-203
37	Heart Disease Prediction Using Machine Learning - Jhansi Lakshmi Manukonda ,R. V. P. S. Rekha. T. Divya. G. L. N. Jayaprada	204-208
38	House Price Prediction - Bodlapati Sowmya Reddy.M. Yamini Priya. P. Manasa	209-213
39	Image Captioning Using Deep Learning - Y E V Pratap Kumar Kuchi.M.Sireesha. G. Sai Akhil. K. Hema Sai Mourya Gupta	214-219

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Guntur (Dist.), A.P.

40	Image Classification Using Object Detection With YOLO Algorithm. Shaik Bhadhar Shareef.Putchakayala Ramesh.Angajala Anil.G. Sambasiva Rao	220-223
41	Implementation Of Video Steganography Cryptography System For Iot-Based Cloud Computing Security. - Sanivarapu Sagar Reddy.Mallavarapu Nikhil.Chevala Venkatesh.Dr. S V N Srinivasu	224-228
42	Inform Me-Family Gps Locator - Oruganti Ramesh.G Prabhakara Reddy. Ch. Anil	229-233
43	Ipl Score Prediction Using Machine Learning Methods - Rajyalakshmi Dondapati.N.Likitha.M.Anmisha	234-241
44	Liver Disease Prediction Using Machine Learning Methods - Sravana Sandhya Rani Karnati.K. Sravana Sandhya Rani, B.V.Gayithri.K.Vijayalakshmi	242-249
45	Loan Prediction System - Divya Gopavarapu.K.Manasa.A.Akhila.M.Sireesha	250-255
46	Lung Cancer Prediction - Naga Mallika Gude.M. Navya Sri. B. Sukanya	256-263
47	Map Reduced Segmentation Clustering For Big Data Analytics Using Extended K-Mean Clustering Technique - Mvs.Prasad	264-270
48	Mask R-Cnn For Fire Detection - Razeena Begum Shaik.S Yogananda Datta . M S V Manoj	271-276
49	Melanoma Prediction Using Deep Learning - Aishwarya Nallapati.D. Jaya Tejaswini. J. Prashanthi. T. Siri Chandana	277-280
50	Multilevel Hierarchy Based Privacy Preserved Profile Publishing In Cloud Environment. - Esthala Abhishek.Kambhampati Adinarayana.Battula Ramesh.G. Sambasiva Rao	281-286
51	Music Recommendation Application Based On Facial Expressions - Ms Mohammad Arsha Sultana.Abdul Saherabegum. Akhila Umma. Guthula Jayasri Sai Nikitha	287-290
52	Mutual Fund Prediction Using Machine Learning - Shaik Nannu Saidavali.N.Vinay Chandra Pal. K.Bhaskar Reddy	291-295
53	Network Coding Techniques To Store The Data Securely In Cloud. - Guru Brahmam Madala. Vijay Anand R	296-301
54	Network Spam And Fake User Detection In Online Social Networks Using Support Vector Machine. - Majeti Pavan Kalyan.Anchula Sreekanth.Ravi Mahesh Babu.G. Sambasiva Rao	302-307
55	Next Word Prediction Using Recurrent Neural Networks - Srikanth Kolisetty.B. Venkateswarlu. S. Siva Sai Kumar. T. Uday Kumar	308-313

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56	Nobel Methodologies For Immigration Of Service Oriented Architecture Based Applications To Microservice Architecture - M Madhu Sudhan, P Indupriyankaray, Aelluri Lakshmi, M Sreenandan Reddy	314-317
57	Plant Leaf Disease Detection System Using Resnet-50 - Chappa.Ramya Sai,K.Kavya,K.Meghana,A.Tulasi	318-321
58	Predicting The Survival Of Patients With Heart Failure-Machine Learning Methods - Hemalatha Tatiparthi,G.Mounika,K.Prasanthi,G.Hemavani	322-329
59	Prediction Of Agriculture Yields Using Machine Learning Algorithms. - Katepalli Sai Sravanthi,Grandhisila Venkatanagalakshmipravallika,Kollipara Harika ,M. Mamatha	330-335
60	Prediction Of Covid 19 Epidemics Using Data Analytics - S.Anil Kumar,G.Sathar	336-343
61	Prediction Of Covid Readmissions Using Machine Learning - Athukuri Lakshmi Narendra Kumar,B.V.V.N.Sai Kumar	344-347
62	Rainfall Prediction Using Machine Learning - Anusha Bhavanam,Ch. Vyshnavi, Ch.Priyanka	348-353
63	Review On Load Balancing Using Cloud Computing - J Raghunath ,A Chandra Sekhar, Shaik Razia, D Venkatesh	354-362
64	Road Safety And Vehicle Accident Prevention - G.Gayatri,G.Gayatri,K.Sugunitha	363-367
65	Sensile Soil Analyzing Application - Mathi Raasi,G.Santhi Sri,M Sravya,Shaik Khaja Mohiddin Basha	368-373
66	Sentiment Analysis Of Movie Reviews Using Ml -Mukunda Gagula,Lakshma Reddy,Sai Venkatesh,Shaik Rafi	374-377
67	Supevised Learning Models for perception of Multi-Trafic Scene	378-383
68	Smart Parking System Using Web Application, - K Razeena Begum, S Anand, K Vivek, K Manideep	384-387

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69	Social Distance Monitoring Using Deep Learning - Satuluri Vijaya Lakshmi.K.K.N. Bhuvaneswari. B.Vijaya Lakshmi	388-398
70	Stock Value Prediction Using Regression - B.Jhansi Vazram. G.Venkatrao. D.Srtinivasa Reddy. V.Ashok Kumar	399-404
71	Summarized Reviews With Attention Mechanism Using Lstm - Tahfeem Shaik,Sirajuddin,Shaikrafi	405-408
72	Supervised Learning For Fraud And Malware Detection From Android Applications. - Tunuguntla Bala Bhaskar Rao ,Dronadula Narendra. Maddu Phanindra Kumar.Dr. S.V.N.Srinivasu	409-415
73	Trust-Based Privacy Preserving Photo Sharing In Online Social Networks - Mrs R.Padmaja.Sk.Shahnoor. N.Nikhila. L.Thanusha	416-419
74	Useableness And Applications Of Blockchain Technology In Cloud Computing Environment - D Venkatesh.M Vijaya Bhaskar. J Raghunath. D Raghava Raju	420-426
75	Weather Prediction - Kotha Tharun Teja,G.Ashok.K.Raviteja.N.Raviteja	427-431
76	Wholesale And Retail Store Management System - Mr K Siva Rama Krishna,Saranya Bala.Y ,Triveni.V . Sai Divya	432-435

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Fake News Detection Application– Machine Learning Techniques

O Aruna[1] G Likitha[2] I NavyaSri[3] D Swetha[4]

[1] *Professor, Narasaraopeta Engineering College, Narasaraopet, India*

[2,3,4] *B.Tech Student, Department of Computer Science and Engineering,Narasaraopeta Engineering College, Narasaraopet,Guntur Dist, A.P*

[1] *arunasri52@gmail.com* [2,3,4] *likithagangasani@gmail.com,navyainguri@gmail.com, swethadadam789@gmail.com*

ABSTRACT

The aim of the project is to detect whether the news is fraud or not using machine learning. This Project comes up with the applications of NLP (Natural Language Processing) techniques for detecting the 'fake news, that is, misleading news stories that comes from the non- reputable sources.

Only by building a model based on a count vectorizer (using word tallies) or a (Term Frequency Inverse Document Frequency) tfidf matrix, (word tallies relative to how often they're used in other articles in your dataset) can only get you so far. But these models do not consider the important qualities like word ordering and context.

It is very possible that two articles that are similar in their word count will be completely different in their meaning. The data science community has responded bytaking actions against the problem.The dataset comprises of the news articles title , text and label which indicates whether the news article is real or fake.

Keywords: Internet, SocialMedia, Fake News, Classification, Machine Learning, Websites, Authenticity.

1. INTRODUCTION

Modern life has become quite convenient and the people of the world have to thank the immense contribution of the internet technology for communication and information sharing. There is no doubt that internet has made our lives easier and access to surplus information viable [3].

But this information can be generated and manipulated by common folks in bulk and the spread of such data is reckless due to the presence of social media. Platforms like Facebook andTwitter have allowed all kinds of questionable and inaccurate"news" content to reach wide audiences without proper monitoring. Social media users bias toward believing what their friends share and what they read regardless of authenticity allow these fake stories to propagate widely through and across multiple platforms and increase their credibility[4]. Google and Facebook have now begun testing out new tools to help users better spot andflag fake news sites. Google is now barring hoax sites from its advertising platform and is testing fact-checking labels in Google News, and Facebook is implementing a new system for users and fact checkers to report suspicious stories [7].

In this domain, computational machine learning algorithms have proven useful where data volumes overwhelm human analysis abilities.

2.LITERATURE SURVEY

Mykhailo Granik et. al. in their paper [3] shows a simple approach for fake news detection using naive Bayes classifier. This approach was implemented as a software system and tested against a data set of Facebook news posts. They were collected from three large Facebook pages each from the right and from theleft, as well as three large mainstream political news pages (Politico, CNN, ABC News). They achieved classification accuracy of approximately 74%. Classification accuracy for fake news is slightly worse. This may be caused by the skewness of thedataset: only 4.9% of it is fake news.

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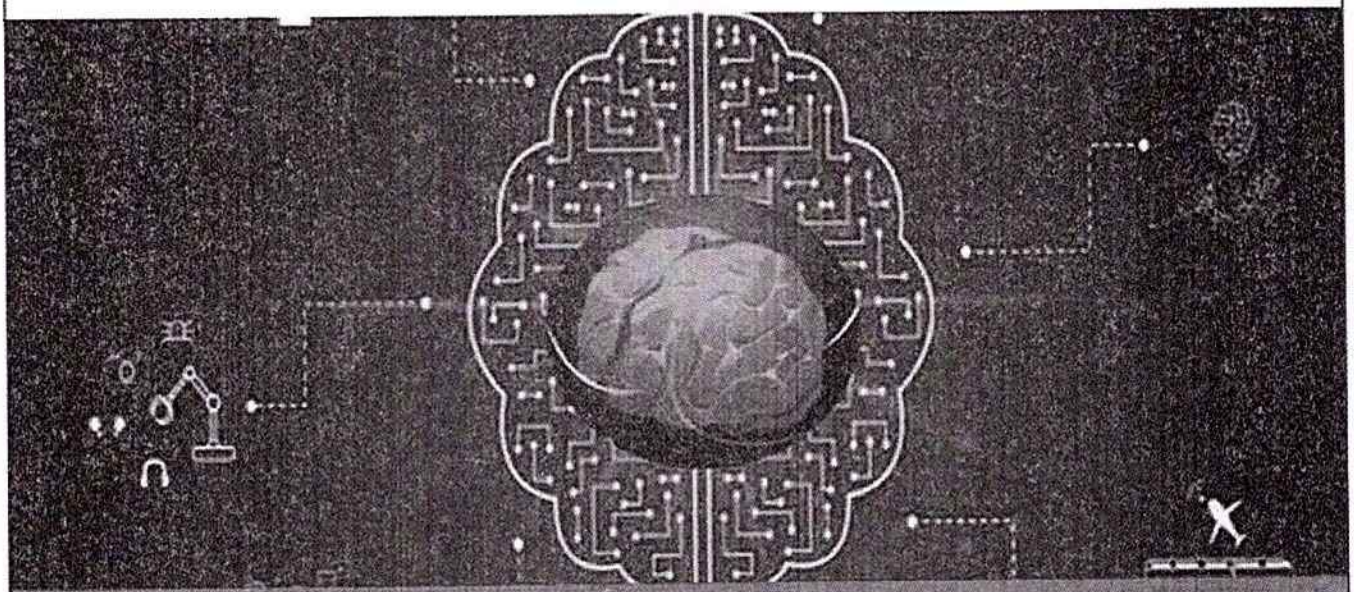

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	Artificial Intelligence and Its Emerging Areas -NEC-ICAIIA 2K21	
1.	A Data Mining Based Model For Detection Of Deceitful Behaviour In Water Consumption - Tejasri Choudi,B.V.Satish, V.Naga Jyothi, K.Navya	1-5
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5	An Interactive Study Of Thyroid Disease Prediction Using Machine Learning - D. Lokesh Gupta, D.Lokesh Gupta, K.V.Narasimha Reddy, D.Ramesh, V.Veerendra	21-25
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15	Design And Experimental Study Of Automatic Colour Sorting By A Robotic Arm System - T.Lakshmibai	79-82
16	Detection Of Autism Disorder Based On Eeg Signal Using Deep Learning Methods -Ranjani M,P.Supraja	83-87
17	Detection Of Online Public Shaming With Offensive Content On Twitter. - Gutta Sai Durga,Gopu Sandhya,Jonnalagadda Madhavi, Dr. S.V.N.Srinivasu	88-91
18	Detection Of Phishing Attacks Using Natural Language Processing And Logistic Regression Model. - Surubula Thirupathi Rao,Pothukuchi Mahesh Babu,Rayala Venu,V. Mahesh Babu	92-98
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20	predections in healthy population through machine learning	104-108
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23	Door Security System Using Face Recognition -Dr A Srinivasa Rao,K.G.J.Prasanth, M. Rama Rao	121-123
24	ECG Classification With Convolutional Neural Networks - S V N Sreenivasu,T Bhargavika,B Anusha ,P Jayasri	124-129
25	Emotion Recognition From Multimodal Data(Speech, Video, Text) Based On Deep Learning Techniques D.P.Supraja	130-137

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27	Eye Ball Cursor Movement Using Opencv - B.Preethi.D.Bharadwaja.B.Preethi. K.Charithra Lavanya.N.Sony	143-147
28	Face.Age And Gender Recogntion System Based on Deep Neural Networks - Gudapati Syam Prasad.K.Narendra Babu.N.Hemanth Kumar.K.Sriniivas	148-154
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30	Fake Currency Detection. - Mr.Sk.K.M.Basha , Yalagala Hema Latha. Gatakala Venkata Sravya Bhavani. Macharla Maitili	163-167
31	Fake News Detection - Gangasani Likitha. I. Navya Sri. D. Swetha	168-175
32	Fake News Detection Using Machine Learning - Srikanth Mylapalli.Mylapalli Ramesh	176-180
33	Forest Fires Detection Using Machine Learning Algorithms - N.S.Sesi Kiran.P. Lakshmi Narayana. Sk. Mastanvali. P. Nivas	181-185
34	Functioning Of Artificial Intelligence In An Self-Driving Vehicle - A Review -Penugonda Surya Teja.None	186-189
35	Generic Recommendation Engine Using Hybrid Filtering Model - G Prabhakara Reddy,O Ramesh. Ch Anil	190-200
36	Head Motion Detection - Dr A Srinivasa Rao.M.Prathyusha. Y.Rajeswari	201-203
37	Heart Disease Prediction Using Machine Learning - Jhansi Lakshmi Manukonda ,R. V. P. S. Rekha, T. Divya, G. L. N. Jayaprada	204-208
38	House Price Prediction - Bodlapati Sowmya Reddy.M. Yamini Priya. P. Manasa	209-213
39	Image Captioning Using Deep Learning - Y E V Pratap Kumar Kuchi.M.Sireesha. G. Sai Akhil. K. Hema Sai Mourya Gupta	214-219

IQAC

Principal
NARASARAOPETA ENGINEERING COLLEGE
(AUTONOMOUS)
NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

40	Image Classification Using Object Detection With YOLO Algorithm. Shaik Bhadhar Shareef.Putchakayala Ramesh.Angajala Anil.G. Sambasiva Rao	220-223
41	Implementation Of Video Steganography Cryptography System For Iot-Based Cloud Computing Security. - Sanivarapu Sagar Reddy.Mallavarapu Nikhil.Chevala Venkatesh.Dr. S.V.N Srinivasu	224-228
42	Inform Me-Family Gps Locator - Oruganti Ramesh.G Prabhakara Reddy. Ch. Anil	229-233
43	Ipl Score Prediction Using Machine Learning Methods - Rajyalakshmi Dondapati.N.Likitha.M.Anmisha	234-241
44	Liver Disease Prediction Using Machine Learning Methods - Sravana Sandhya Rani Karnati.K. Sravana Sandhya Rani. B.V.Gayithri.K.Vijayalakshmi	242-249
45	Loan Prediction System - Divya Gopavarapu.K.Manasa.A.Akhila.M.Sireesha	250-255
46	Lung Cancer Prediction - Naga Mallika Gude.M. Navya Sri. B. Sukanya	256-263
47	Map Reduced Segmentation Clustering For Big Data Analytics Using Extended K-Mean Clustering Technique - Mvs.Prasad	264-270
48	Mask R-Cnn For Fire Detection - Razeena Begum Shaik.S Yogananda Datta . M S V Manoj	271-276
49	Melanoma Prediction Using Deep Learning - Aishwarya Nallapati.D. Jaya Tejaswini. J. Prashanthi. T. Siri Chandana	277-280
50	Multilevel Hierarchy Based Privacy Preserved Profile Publishing In Cloud Environment. - Esthala Abhishek.Kambhampati Adinarayana.Battula Ramesh.G. Sambasiva Rao	281-286
51	Music Recommendation Application Based On Facial Expressions - Ms Mohammad Arsha Sultana.Abdul Saherabegum. Akhila Umma. Guthula Jayasri Sai Nikitha	287-290
52	Mutual Fund Prediction Using Machine Learning - Shaik Nannu Saidavali.N.Vinay Chandra Pal. K.Bhaskar Reddy	291-295
53	Network Coding Techniques To Store The Data Securely In Cloud. - Guru Brahmam Madala. Vijay Anand R	296-301
54	Network Spam And Fake User Detection In Online Social Networks Using Support Vector Machine. - Majeti Pavan Kalyan.Anchula Sreekanth.Ravi Mahesh Babu.G. Sambasiva Rao	302-307
55	Next Word Prediction Using Recurrent Neural Networks - Srikanth Kolisetty.B. Venkateswarlu. S. Siva Sai Kumar. T. Uday Kumar	308-313

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Guntur (Dist.), A.P.

56	Nobel Methodologies For Immigration Of Service Oriented Architecture Based Applications To Microservice Architecture - M Madhu Sudhan, P Indupriyankaray, Aelluri Lakshmi, M Sreenandan Reddy	314-317
57	Plant Leaf Disease Detection System Using Resnet-50 - Chappa.Ramya Sai,K.Kavya,K.Meghana,A.Tulasi	318-321
58	Predicting The Survival Of Patients With Heart Failure-Machine Learning Methods - Hemalatha Tatiparthi,G.Mounika,K.Prasanthi,G.Hemavani	322-329
59	Prediction Of Agriculture Yields Using Machine Learning Algorithms. - Katepalli Sai Sravanthi,Grandhisila Venkatanagalakshmipravallika,Kollipara Harika ,M. Mamatha	330-335
60	Prediction Of Covid 19 Epidemics Using Data Analytics - S.Anil Kumar,G.Sathar	336-343
61	Prediction Of Covid Readmissions Using Machine Learning - Athukuri Lakshmi Narendra Kumar,B.V.V.N.Sai Kumar	344-347
62	Rainfall Prediction Using Machine Learning - Anusha Bhavanam,Ch. Vyshnavi, Ch.Priyanka	348-353
63	Review On Load Balancing Using Cloud Computing - J Raghunath ,A Chandra Sekhar, Shaik Razia, D Venkatesh	354-362
64	Road Safety And Vehicle Accident Prevention - G.Gayatri,G.Gayatri,K.Sugunitha	363-367
65	Sensile Soil Analyzing Application - Mathi Raasi,G.Santhi Sri,M Sravya,Shaik Khaja Mohiddin Basha	368-373
66	Sentiment Analysis Of Movie Reviews Using Ml -Mukunda Gagula,Lakshma Reddy,Sai Venkatesh,Shaik Rafi	374-377
67	Supevised Learning Models for perception of Multi-Trafic Scene	378-383
68	Smart Parking System Using Web Application, - K Razeena Begum, S Anand, K Vivek, K Manideep	384-387

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69	Social Distance Monitoring Using Deep Learning - Satuluri Vijaya Lakshmi.K.K.N. Bhuvaneswari. B.Vijaya Lakshmi	388-398
70	Stock Value Prediction Using Regression - B.Jhansi Vazram. G.Venkatrao. D.Srtinivasa Reddy. V.Ashok Kumar	399-404
71	Summarized Reviews With Attention Mechanism Using Lstm - Tahfeem Shaik,Sirajuddin,Shaikrafi	405-408
72	Supervised Learning For Fraud And Malware Detection From Android Applications. - Tunuguntla Bala Bhaskar Rao ,Dronadula Narendra. Maddu Phanindra Kumar.Dr. S.V.N.Srinivasu	409-415
73	Trust-Based Privacy Preserving Photo Sharing In Online Social Networks - Mrs R.Padmaja,Sk.Shahnoor. N.Nikhila. L.Thanusha	416-419
74	Useableness And Applications Of Blockchain Technology In Cloud Computing Environment - D Venkatesh,M Vijaya Bhaskar. J Raghunath. D Raghava Raju	420-426
75	Weather Prediction - Kotha Tharun Teja,G.Ashok,K.Raviteja,N.Raviteja	427-431
76	Wholesale And Retail Store Management System - Mr K Siva Rama Krishna,Saranya Bala.Y ,Triveni.V , Sai Divya	432-435

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Calories Burned Prediction using Machine Learning Techniques

Motupalli Niharika1, B.Siva Kanaka Raju2, Shaik Mehataj3 U. Jhansi Rani4 T .Bhavani5

Narasaraopeta Engineering College, Narasaraopet, India

niharikamotupalli@gmail.com skraju.battula@gmail.com, mehatajshaik30@gmail.com
jhansiuggam98@gmail.com ukthibhavani@gmail.com

Abstract.

Although exercise regimens vary in content and duration, few studies have compared the caloric expenditure of multiple exercise modalities with the same duration. As obese people are most concerned about losing their weight, they regularly need to check the weight they lose during exercises. This dataset contains the number of calories burned by a person according to their age, weight, height heart rate, body temp .It currently contains 15000 records in dataset. It helps in calculating calories burnt by using time during an factors of different people weights or calories burned by a person weighing in lb. This form of exercise or activities intervention may be beneficial to individuals who want to gain the benefits of both resistance and weight loss but have limited time to dedicate to exercise or activities by duration of time. Accuracy of this is about 100 % decision tree and rf.

1. Introduction

In this fast and busy schedule life, people are not giving importance to the quality of food they are eating. The fast-food consumption rate is alarmingly high and this consequently has led to the intake of unhealthy food [8]. This leads to various health issues such as obesity, diabetes, an increase in blood pressure etc. There are many applications which are booming to help people so that they can have control over their diet and hence can reduce weight or they can help them to keep them fit and healthy[10]. Here, we will use various machine learning algorithms such as Random Forest, KNN, Decision Tree and Logistic Regression[24]. This paper uses different machine learning algorithms for comparing the accuracy among them.

2. Literature Survey

[13]Wibisono, G.; Astawa, I.G.B. Designing Machine-to-Machine (M2M) Prototype "System for Weight oss Program for Obesity and Overweight Patients". In Proceedings of the 2016 7th International Conference on Intelligent Systems, Modelling and Simulation (ISMS), Bangkok, Thailand, 25–27 January 2016;

[24]Wu W, Dasgupta S, Ramirez EE, Peterson C, Norman GJ. "Classification accuracies of physical Activities using smartphone motion sensors. J Med Internet Res 2012";

3. Proposed Model

a. Experimental setup: This experiment was onducted on the Intel® Core™ i3 Processors with 64 bit Windows 10 machine. Anacon4da 5.1.0 Spyder Python distribution is used in this experiment. We have collected the real information from kaggle.com. This database contains 9 attributes refers to the burning of calories by the person shows the process of the proposed system of Calories burned prediction.

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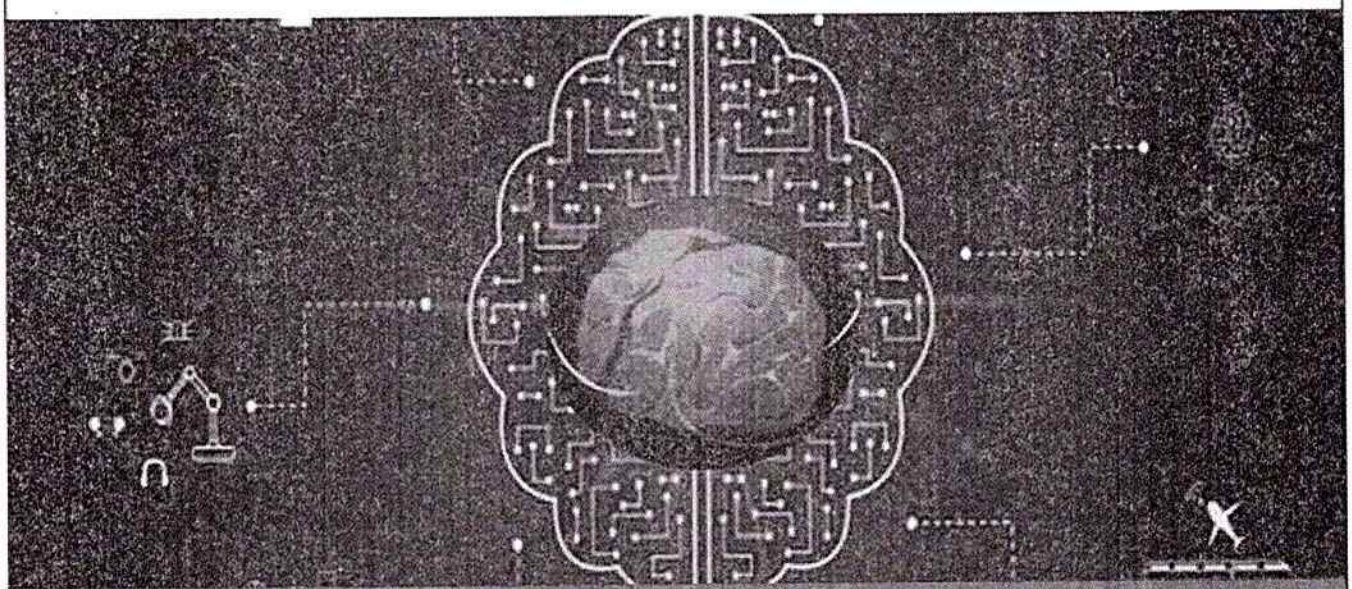

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International Conference On

Artificial Intelligence and Its Emerging Areas

-

REF. NO	TITLE OF THE PAPER AND AUTHOR(S)	Page No.
	Artificial Intelligence and Its Emerging Areas -NEC-ICAIIA 2K21	
1.	A Data Mining Based Model For Detection Of Deceitful Behaviour In Water Consumption - Tejasri Choudi,B.V.Satish, V.Naga Jyothi, K.Navya	1-5
2	A Machine Learning Framework For Prediction Of Heart Disease. Ramasetty Ramu,Kota Jagadeesh,Chanti Rajamohan Reddy,V. Mahesh Babu	6-10
3	A Supervised Learning Algorithm For Credit Card Fraud Detection. - Guggilam Sai Sri, Gummadilli Gouthami, Potluri Srividya, M. Mamatha	11-15
4	Amazon Product Review Sentiment Analysis Using Machine Learning - Ms Mohammad Arsha Sultana,P. Rakesh, M. Sandeep, G. Jagadeesh	16-20
5	An Interactive Study Of Thyroid Disease Prediction Using Machine Learning - D. Lokesh Gupta, D.Lokesh Gupta, K.V.Narasimha Reddy, D.Ramesh, V.Veerendra	21-25
6	Autoregressive Integrated Moving Average Model For Prediction Of Crypto Curreney. - Pokuri Jaya Venkata Naga Sudhakar,Alladi Anil,Avula Venkata Rami Reddy,V. Mahesh Babu	26--29
7	Biometric Identification Scheme With Efficient Privacy-Preserving Mechanism For Cloud Computing Service, - Shaik Ruksana,Bandaru Naga Siva Saisuryatejaswi,Yadavalli Yedukondalu,M Mamatha	30-34
8	Bitcoin Price Prediction -Mrs R.Padmaja,K.V.D Hanisha, B Amulya, M Harika	35-38
9	Calories Burned Prediction. - Niharika Motupalli, B.Siva Kanaka Raju Shaik Mehataj , U. Jhansi Rani, T .Bhavani	39-45
10	Cartoonize Image Using Deep Learning - Gouse Mastan Vali,D.Vamsi Krishna, A.Sairam,K.S.Lakshmi Narayana	46-54
11	Children Speech Recognition Using Machine Learning Methodologies - Dr.T.V.Sai Krishna, R Venkat	55-60

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NARASARAOPETA ENGINEERING COLLEGE
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NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

12	Clarification Of Webbing Through Cloud Computing Technologies - Amara.S.A.L.G.Gopala Gupta.Dr. Gudapati Syam Prasad	61-65
13	Convolutional Lstm Model For Sentiment Analysis On Social Big Data - Raghuveer Pachipulusu.V.Ananth Reddy. R.Sai Kiran. T.Vignesh	66-72
14	Data Preprocessing For Efficient Prediction In Customer Relationship Management. - Patur Ganga. K.Arun	73-78
15	Design And Experimental Study Of Automatic Colour Sorting By A Robotic Arm System - T.Lakshmibai	79-82
16	Detection Of Autism Disorder Based On Eeg Signal Using Deep Learning Methods -Ranjani M.P.Supraja	83-87
17	Detection Of Online Public Shaming With Offensive Content On Twitter. - Gutta Sai Durga.Gopu Sandhya.Jonnalagadda Madhavi. Dr. S.V.N.Srinivasu	88-91
18	Detection Of Phishing Attacks Using Natural Language Processing And Logistic Regression Model. - Surubula Thirupathi Rao.Pothukuchi Mahesh Babu.Rayala Venu.V. Mahesh Babu	92-98
19	Detection Of Social Network Mental Disorders Through Mining Of Online Social Media. - Battula Venkata Ananta Mehar Gopi.Rajarapu Venu Babu.Maddineni Naveen .Dr. S.V.N.Srinivasu	99-103
20	predections in healthy population through machine learning	104-108
21	Diabetics Prediction using Machine Learning Techniques. - Pathan Sajida. S.Amulya , V.Nandhini	109-114
22	DL-CNN Framework For Malicious Social Bots Detection. - Syed Fathima,Ponnapati Mallika.Gandru Akhilendra Chowdary.M. Mamatha	115-120
23	Door Security System Using Face Recognition -Dr A Srinivasa Rao.K.G.J.Prasanth. M. Rama Rao	121-123
24	ECG Classification With Convolutional Neural Networks - S V N Sreenivasu.T Bhargavika,B Anusha ,P Jayasri	124-129
25	Emotion Recognition From Multimodal Data(Speech. Video. Text) Based On Deep Learning Techniques D.P.Supraja	130-137

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NARASARAOPETA ENGINEERING COLLEGE
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NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

26	Estimation Of Population Analysis - Tarun.G.Tarun.T.Purnavamsi.K.Vivekreddy	138-142
27	Eye Ball Cursor Movement Using Opencv - B.Preethi.D.Bharadwaja.B.Preethi. K.Charithra Lavanya.N.Sony	143-147
28	Face.Age And Gender Recogntion System Based on Deep Neural Networks - Gudapati Syam Prasad.K.Narendra Babu.N.Hemanth Kumar.K.Sriniivas	148-154
29	Facial Expression Recognition With Convolutional Neural Networks - S. Siva Nageswara Rao.S.Ramya. T.Anantha Lavanya	155-162
30	Fake Currency Detection. - Mr.Sk.K.M.Basha , Yalagala Hema Latha. Gatakala Venkata Sravya Bhavani. Macharla Maitili	163-167
31	Fake News Detection - Gangasani Likitha. I. Navya Sri. D. Swetha	168-175
32	Fake News Detection Using Machine Learning - Srikanth Mylapalli.Mylapalli Ramesh	176-180
33	Forest Fires Detection Using Machine Learning Algorithms - N.S.Sesi Kiran.P. Lakshmi Narayana. Sk. Mastanvali. P. Nivas	181-185
34	Functioning Of Artificial Intelligence In An Self-Driving Vehicle - A Review -Penugonda Surya Teja.None	186-189
35	Generic Recommendation Engine Using Hybrid Filtering Model - G Prabhakara Reddy.O Ramesh. Ch Anil	190-200
36	Head Motion Detection - Dr A Srinivasa Rao.M.Prathyusha. Y.Rajeswari	201-203
37	Heart Disease Prediction Using Machine Learning - Jhansi Lakshmi Manukonda .R. V. P. S. Rekha. T. Divya. G. L. N. Jayaprada	204-208
38	House Price Prediction - Bodlapati Sowmya Reddy.M. Yamini Priya. P. Manasa	209-213
39	Image Captioning Using Deep Learning - Y E V Pratap Kumar Kuchi.M.Sireesha. G. Sai Akhil. K. Hema Sai Mourya Gupta	214-219

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Principal
NARASARAOPETA ENGINEERING COLLEGE
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NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

40	Image Classification Using Object Detection With YOLO Algorithm. Shaik Bhadhar Shareef.Putchakayala Ramesh..Angajala Anil.G. Sambasiva Rao	220-223
41	Implementation Of Video Steganography Cryptography System For Iot-Based Cloud Computing Security. - Samvarapu Sagar Reddy.Mallavarapu Nikhil.Chevala Venkatesh.Dr S V.N Srinivasu	224-228
42	Inform Me-Family Gps Locator - Oruganti Ramesh.G Prabhakara Reddy. Ch. Anil	229-233
43	Ipl Score Prediction Using Machine Learning Methods - Rajyalakshmi Dondapati.N.Likitha.M.Anmisha	234-241
44	Liver Disease Prediction Using Machine Learning Methods - Sravana Sandhya Rani Karnati.K. Sravana Sandhya Rani, B.V.Gayithri.K.Vijayalakshmi	242-249
45	Loan Prediction System - Divya Gopavarapu.K.Manasa.A.Akhila.M.Sireesha	250-255
46	Lung Cancer Prediction - Naga Mallika Gude.M. Navya Sri, B. Sukanya	256-263
47	Map Reduced Segmentation Clustering For Big Data Analytics Using Extended K-Mean Clustering Technique - Mvs.Prasad	264-270
48	Mask R-Cnn For Fire Detection - Razeena Begum Shaik.S Yogananda Datta . M S V Manoj	271-276
49	Melanoma Prediction Using Deep Learning - Aishwarya Nallapati.D. Jaya Tejaswini. J. Prashanthi. T. Siri Chandana	277-280
50	Multilevel Hierarchy Based Privacy Preserved Profile Publishing In Cloud Environment. - Esthala Abhishek.Kambhampati Adinarayana.Battula Ramesh.G. Sambasiva Rao	281-286
51	Music Recommendation Application Based On Facial Expressions - Ms Mohammad Arsha Sultana.Abdul Saherabegum, Akhila Umma, Guthula Jayasri Sai Nikitha	287-290
52	Mutual Fund Prediction Using Machine Learning - Shaik Nannu Saidavali.N.Vinay Chandra Pal, K.Bhaskar Reddy	291-295
53	Network Coding Techniques To Store The Data Securely In Cloud. - Guru Brahmam Madala, Vijay Anand R	296-301
54	Network Spam And Fake User Detection In Online Social Networks Using Support Vector Machine. - Majeti Pavan Kalyan.Anchula Sreekanth.Ravi Mahesh Babu.G. Sambasiva Rao	302-307
55	Next Word Prediction Using Recurrent Neural Networks - Srikanth Kolisetty.B. Venkateswarlu, S. Siva Sai Kumar, T. Uday Kumar	308-313

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56	Nobel Methodologies For Immigration Of Service Oriented Architecture Based Applications To Microservice Architecture - M Madhu Sudhan, P Indupriyankaray, Aelluri Lakshmi, M Sreenandan Reddy	314-317
57	Plant Leaf Disease Detection System Using Resnet-50 - Chappa.Ramya Sai,K.Kavya,K.Meghana,A.Tulasi	318-321
58	Predicting The Survival Of Patients With Heart Failure-Machine Learning Methods - Hemalatha Tatiparthi,G.Mounika,K.Prasanthi,G.Hemavani	322-329
59	Prediction Of Agriculture Yields Using Machine Learning Algorithms. - Katepalli Sai Sravanthi,Grandhisila Venkatanagalakshmipravallika,Kollipara Harika ,M. Mamatha	330-335
60	Prediction Of Covid 19 Epidemics Using Data Analytics - S.Anil Kumar,G.Sathar	336-343
61	Prediction Of Covid Readmissions Using Machine Learning - Athukuri Lakshmi Narendra Kumar,B.V.V.N.Sai Kumar	344-347
62	Rainfall Prediction Using Machine Learning - Anusha Bhavanam,Ch. Vyshnavi, Ch.Priyanka	348-353
63	Review On Load Balancing Using Cloud Computing - J Raghunath ,A Chandra Sekhar, Shaik Razia, D Venkatesh	354-362
64	Road Safety And Vehicle Accident Prevention - G.Gayatri,G.Gayatri,K.Sugunitha	363-367
65	Sensile Soil Analyzing Application - Mathi Raasi,G.Santhi Sri,M Sravya,Shaik Khaja Mohiddin Basha	368-373
66	Sentiment Analysis Of Movie Reviews Using Ml -Mukunda Gagula,Lakshma Reddy,Sai Venkatesh,Shaik Rafi	374-377
67	Supevised Learning Models for perception of Multi-Trafic Scene	378-383
68	Smart Parking System Using Web Application. - K Razeena Begum, S Anand, K Vivek, K Manideep	384-387

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69	Social Distance Monitoring Using Deep Learning - Satuluri Vijaya Lakshmi.K.K.N. Bhuvaneswari, B.Vijaya Lakshmi	388-398
70	Stock Value Prediction Using Regression - B.Jhansi Vazram, G.Venkatrao, D.Srtinivasa Reddy, V.Ashok Kumar	399-404
71	Summarized Reviews With Attention Mechanism Using Lstm - Tahfeem Shaik.Sirajuddin.Shaikrafi	405-408
72	Supervised Learning For Fraud And Malware Detection From Android Applications. - Tunuguntla Bala Bhaskar Rao ,Dronadula Narendra, Maddu Phanindra Kumar.Dr. S.V.N.Srinivasu	409-415
73	Trust-Based Privacy Preserving Photo Sharing In Online Social Networks - Mrs R.Padmaja.Sk.Shahnoor, N.Nikhila, L.Thanusha	416-419
74	Useableness And Applications Of Blockchain Technology In Cloud Computing Environment - D Venkatesh.M Vijaya Bhaskar, J Raghunath, D Raghava Raju	420-426
75	Weather Prediction - Kotha Tharun Teja.G.Ashok.K.Raviteja.N.Raviteja	427-431
76	Wholesale And Retail Store Management System - Mr K Siva Rama Krishna.Saranya Bala.Y ,Triveni.V , Sai Divya	432-435

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CSE 024

DATA PREPROCESSING FOR EFFICIENT PREDICTION IN CUSTOMER RELATIONSHIP MANAGENT

P.Ganga[1], K.Arun[2]

[1]*Assistant professor in CSE Dept, Mallareddy Reddy College of Engineering, Hyderabad.*

[2]*Assistant professor in CSE Dept, Narasaraopet Engineering College, Narasaraopet.*

[1]ganga06patur@gmail.com

[2]karun014@gmail.com

ABSTRCT Consumer Relationship Management (CRM) can use information from outside or within a companey allowing much better comprehension of its customers on the set basis or to your own foundation, by producing client personalized documents. An improved knowledge of the buyer's customs, pursuits and demands might grow the transaction. So, steady information regarding your clients' choices and preferences forms the cornerstone of productive CRM. Since organizations become internet (in other words, grow in to e business), the find it difficult to maintain faithfulness in their older customers and also to entice clients remains more crucial, as a competitor's enterprise internet site might be only 1 click away. In this paper we studied data preprocessing methods for client log data.

Keywords: Data preprocessing, log, competitor prediction and Big data.

I. INTRODUCTION

Voluminous of information active in those on-line World Wide Web have managed to get rather vital that you utilize automatic data mining and knowledge discovery procedures to learn person navigation tastes. The various manners of internet website usage using way of a specific user could possibly be detected with World Wide Web usage mining methods that can mechanically recover ordinary accessibility patterns employing the utilization of sooner user simply click flows utilized in weblog data files. These Programs might be properly used towards designing the internet page for your own user and also to encourage digital advertising.

Net usage mining technologies incorporates methods from two hot search areas, specifically, data mining and also the World Wide Web. By assessing the competition understanding concealed in blogs, internet usage mining may assist searchers to supply much better layout and enterprise worries to present much better navigation behavior. Many businesses are emphasizing buyer orientation to both maintain regular users to its growth of consumer relationship administration. Investigation of curious browsers, gives invaluable advice for internet site designer to swiftly react for their own unique wants. This chapter introduces the search methodology

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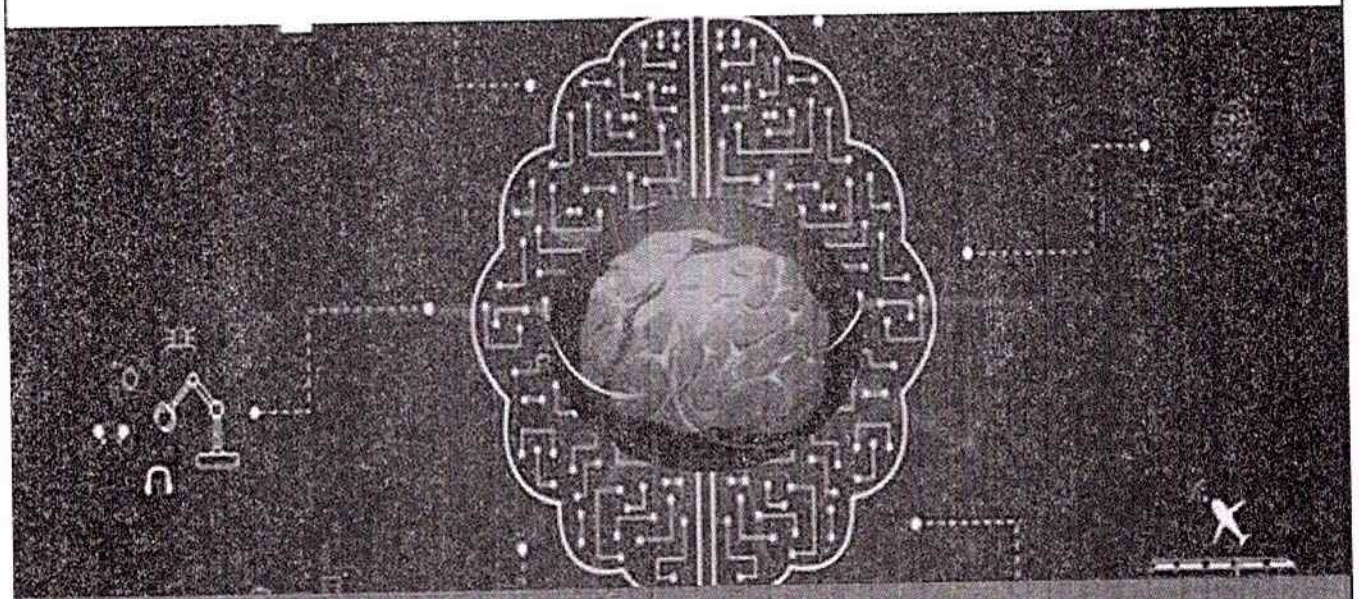

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LIST OF FULL LENGTH PAPERS SELECTED FOR PROCEEDINGS IN

International Conference On

Artificial Intelligence and Its Emerging Areas

-

REF. NO	TITLE OF THE PAPER AND AUTHOR(S)	Page No.
	Artificial Intelligence and Its Emerging Areas -NEC-ICAIIA 2K21	
1.	A Data Mining Based Model For Detection Of Deceitful Behaviour In Water Consumption - Tejasri Choudi,B.V.Satish, V.Naga Jyothi, K.Navya	1-5
2	A Machine Learning Framework For Prediction Of Heart Disease, Ramasetty Ramu,Kota Jagadeesh,Chanti Rajamohan Reddy,V. Mahesh Babu	6-10
3	A Supervised Learning Algorithm For Credit Card Fraud Detection, - Guggilam Sai Sri, Gummadilli Gouthami, Potluri Srividya, M. Mamatha	11-15
4	Amazon Product Review Sentiment Analysis Using Machine Learning - Ms Mohammad Arsha Sultana,P. Rakesh, M. Sandeep, G. Jagadeesh	16-20
5	An Interactive Study Of Thyroid Disease Prediction Using Machine Learning - D. Lokesh Gupta, D.Lokesh Gupta, K.V.Narasimha Reddy, D.Ramesh, V.Veerendra	21-25
6	Autoregressive Integrated Moving Average Model For Prediction Of Crypto Currency, - Pokuri Jaya Venkata Naga Sudhakar,Alladi Anil,Avula Venkata Rami Reddy,V. Mahesh Babu	26--29
7	Biometric Identification Scheme With Efficient Privacy-Preserving Mechanism For Cloud Computing Service, - Shaik Ruksana,Bandaru Naga Siva Saisuryatejaswi,Yadavalli Yedukondalu,M Mamatha	30-34
8	Bitcoin Price Prediction -Mrs R.Padmaja,K.V.D Hanisha, B Amulya, M Harika	35-38
9	Calories Burned Prediction, - Niharika Motupalli, B.Siva Kanaka Raju Shaik Mehataj , U. Jhansi Rani, T .Bhavani	39-45
10	Cartoonize Image Using Deep Learning - Gouse Mastan Vali,D.Vamsi Krishna, A.Sairam,K.S.Lakshmi Narayana	46-54
11	Children Speech Recognition Using Machine Learning Methodologies - Dr.T.V.Sai Krishna, R Venkat	55-60

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Principal
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Guntur (Dist.), A.P.

12	Clarification Of Webbing Through Cloud Computing Technologies - Amara.S.A.L.G.Gopala Gupta,Dr. Gudapati Syam Prasad	61-65
13	Convolutional Lstm Model For Sentiment Analysis On Social Big Data - Raghuveer Pachipulusu,V.Ananth Reddy, R.Sai Kiran, T.Vignesh	66-72
14	Data Preprocessing For Efficient Prediction In Customer Relationship Management, - Patur Ganga, K.Arun	73-78
15	Design And Experimental Study Of Automatic Colour Sorting By A Robotic Arm System - T.Lakshmibai	79-82
16	Detection Of Autism Disorder Based On Eeg Signal Using Deep Learning Methods -Ranjani M.P.Supraja	83-87
17	Detection Of Online Public Shaming With Offensive Content On Twitter, - Gutta Sai Durga,Gopu Sandhya,Jonnalagadda Madhavi, Dr. S.V.N.Srinivasu	88-91
18	Detection Of Phishing Attacks Using Natural Language Processing And Logistic Regression Model, - Surubula Thirupathi Rao,Pothukuchi Mahesh Babu,Rayala Venu,V. Mahesh Babu	92-98
19	Detection Of Social Network Mental Disorders Through Mining Of Online Social Media, - Battula Venkata Ananta Mehar Gopi,Rajarapu Venu Babu,Maddineni Naveen ,Dr. S.V.N.Srinivasu	99-103
20	predections in healthy population through machine learning	104-108
21	Diabetics Prediction using Machine Learning Techniques, - Pathan Sajida, S.Amulya , V.Nandhini	109-114
22	DL-CNN Framework For Malicious Social Bots Detection, - Syed Fathima,Ponnapati Mallika,Gandru Akhilendra Chowdary,M. Mamatha	115-120
23	Door Security System Using Face Recognition -Dr A Srinivasa Rao,K.G.J.Prasanth, M. Rama Rao	121-123
24	ECG Classification With Convolutional Neural Networks - S V N Sreenivasu,T Bhargavika,B Anusha ,P Jayasri	124-129
25	Emotion Recognition From Multimodal Data(Speech, Video, Text) Based On Deep Learning Techniques D.P.Supraja	130-137

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Principal
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NARASARAOPET - 522 601.
Guntur (Dist.)

26	Estimation Of Population Analysis - Tarun.G.Tarun.T.Purnavamsi.K.Vivekreddy	138-142
27	Eye Ball Cursor Movement Using Opencv - B.Preethi.D.Bharadwaja.B.Preethi. K.Charithra Lavanya.N.Sony	143-147
28	Face.Age And Gender Recogntion System Based on Deep Neural Networks - Gudapati Syam Prasad.K.Narendra Babu.N.Hemanth Kumar.K.Sriniivas	148-154
29	Facial Expression Recognition With Convolutional Neural Networks - S. Siva Nageswara Rao.S.Ramya. T.Anantha Lavanya	155-162
30	Fake Currency Detection. - Mr.Sk.K.M.Basha , Yalagala Hema Latha. Gatakala Venkata Sravya Bhavani. Macharla Maitili	163-167
31	Fake News Detection - Gangasani Likitha. I. Navya Sri. D. Swetha	168-175
32	Fake News Detection Using Machine Learning - Srikanth Mylapalli.Mylapalli Ramesh	176-180
33	Forest Fires Detection Using Machine Learning Algorithms - N.S.Sesi Kiran.P. Lakshmi Narayana. Sk. Mastanvali. P. Nivas	181-185
34	Functioning Of Artificial Intelligence In An Self-Driving Vehicle - A Review -Penugonda Surya Teja.None	186-189
35	Generic Recommendation Engine Using Hybrid Filtering Model - G Prabhakara Reddy.O Ramesh. Ch Anil	190-200
36	Head Motion Detection - Dr A Srinivasa Rao.M.Prathyusha. Y.Rajeswari	201-203
37	Heart Disease Prediction Using Machine Learning - Jhansi Lakshmi Manukonda .R. V. P. S. Rekha. T. Divya. G. L. N. Jayaprada	204-208
38	House Price Prediction - Bodlapati Sowmya Reddy.M. Yamini Priya. P. Manasa	209-213
39	Image Captioning Using Deep Learning - Y E V Pratap Kumar Kuchi.M.Sireesha. G. Sai Akhil. K. Hema Sai Mourya Gupta	214-219

IQAC

Principal
NARASARAOPETA ENGINEERING COLLEGE
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NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

40	Image Classification Using Object Detection With YOLO Algorithm. Shaik Bhadhar Shareef.Putchakayala Ramesh.Angajala Anil.G. Sambasiva Rao	220-223
41	Implementation Of Video Steganography Cryptography System For Iot-Based Cloud Computing Security. - Santvarapu Sagar Reddy.Mallavarapu Nikhil.Chevala Venkatesh.Dr. S V N.Srinivasu	224-228
42	Inform Me-Family Gps Locator - Oruganti Ramesh.G Prabhakara Reddy. Ch. Anil	229-233
43	Ipl Score Prediction Using Machine Learning Methods - Rajyalakshmi Dondapati.N.Likitha.M.Anmisha	234-241
44	Liver Disease Prediction Using Machine Learning Methods - Sravana Sandhya Rani Karnati.K. Sravana Sandhya Rani, B.V.Gayithri.K.Vijayalakshmi	242-249
45	Loan Prediction System - Divya Gopavarapu.K.Manasa.A.Akhila.M.Sireesha	250-255
46	Lung Cancer Prediction - Naga Mallika Gude.M. Navya Sri, B. Sukanya	256-263
47	Map Reduced Segmentation Clustering For Big Data Analytics Using Extended K-Mean Clustering Technique - Mvs.Prasad	264-270
48	Mask R-Cnn For Fire Detection - Razeena Begum Shaik.S Yogananda Datta . M S V Manoj	271-276
49	Melanoma Prediction Using Deep Learning - Aishwarya Nallapati.D. Jaya Tejaswini. J. Prashanthi. T. Siri Chandana	277-280
50	Multilevel Hierarchy Based Privacy Preserved Profile Publishing In Cloud Environment. - Esthala Abhishek.Kambhampati Adinarayana.Battula Ramesh.G. Sambasiva Rao	281-286
51	Music Recommendation Application Based On Facial Expressions - Ms Mohammad Arsha Sultana.Abdul Saherabegum. Akhila Umma. Guthula Jayasri Sai Nikitha	287-290
52	Mutual Fund Prediction Using Machine Learning - Shaik Nannu Saidavali.N.Vinay Chandra Pal. K.Bhaskar Reddy	291-295
53	Network Coding Techniques To Store The Data Securely In Cloud. - Guru Brahmam Madala, Vijay Anand R	296-301
54	Network Spam And Fake User Detection In Online Social Networks Using Support Vector Machine. - Majeti Pavan Kalyan.Anchula Sreekanth.Ravi Mahesh Babu.G. Sambasiva Rao	302-307
55	Next Word Prediction Using Recurrent Neural Networks - Srikanth Kolisetty.B. Venkateswarlu, S. Siva Sai Kumar. T. Uday Kumar	308-313

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NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

56	Nobel Methodologies For Immigration Of Service Oriented Architecture Based Applications To Microservice Architecture - M Madhu Sudhan, P Indupriyankaray, Aelluri Lakshmi, M Sreenandan Reddy	314-317
57	Plant Leaf Disease Detection System Using Resnet-50 - Chappa.Ramya Sai,K.Kavya,K.Meghana,A.Tulasi	318-321
58	Predicting The Survival Of Patients With Heart Failure-Machine Learning Methods - Hemalatha Tatiparthi,G.Mounika,K.Prasanthi,G.Hemavani	322-329
59	Prediction Of Agriculture Yields Using Machine Learning Algorithms. - Katepalli Sai Sravanthi,Grandhisila Venkatanagalakshmipravallika,Kollipara Harika ,M. Mamatha	330-335
60	Prediction Of Covid 19 Epidemics Using Data Analytics - S.Anil Kumar,G.Sathar	336-343
61	Prediction Of Covid Readmissions Using Machine Learning - Athukuri Lakshmi Narendra Kumar,B.V.V.N.Sai Kumar	344-347
62	Rainfall Prediction Using Machine Learning - Anusha Bhavanam,Ch. Vyshnavi, Ch.Priyanka	348-353
63	Review On Load Balancing Using Cloud Computing - J Raghunath ,A Chandra Sekhar, Shaik Razia, D Venkatesh	354-362
64	Road Safety And Vehicle Accident Prevention - G.Gayatri,G.Gayatri,K.Sugunitha	363-367
65	Sensile Soil Analyzing Application - Mathi Raasi,G.Santhi Sri,M Sravya,Shaik Khaja Mohiddin Basha	368-373
66	Sentiment Analysis Of Movie Reviews Using Ml -Mukunda Gagula,Lakshma Reddy,Sai Venkatesh,Shaik Rafi	374-377
67	Supevised Learning Models for perception of Multi-Trafic Scene	378-383
68	Smart Parking System Using Web Application. - K Razeena Begum, S Anand, K Vivek, K Manideep	384-387

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NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

69	Social Distance Monitoring Using Deep Learning - Satuluri Vijaya Lakshmi.K.K.N. Bhuvaneswari. B.Vijaya Lakshmi	388-398
70	Stock Value Prediction Using Regression - B.Jhansi Vazram. G.Venkatrao. D.Srtinivasa Reddy. V.Ashok Kumar	399-404
71	Summarized Reviews With Attention Mechanism Using Lstm - Tahfeem Shaik.Sirajuddin.Shaikrafi	405-408
72	Supervised Learning For Fraud And Malware Detection From Android Applications. - Tunuguntla Bala Bhaskar Rao .Dronadula Narendra. Maddu Phanindra Kumar.Dr. S.V.N.Srinivasu	409-415
73	Trust-Based Privacy Preserving Photo Sharing In Online Social Networks - Mrs R.Padmaja.Sk.Shahnoor. N.Nikhila. L.Thanusha	416-419
74	Useableness And Applications Of Blockchain Technology In Cloud Computing Environment - D Venkatesh.M Vijaya Bhaskar. J Raghunath. D Raghava Raju	420-426
75	Weather Prediction - Kotha Tharun Teja.G.Ashok.K.Raviteja.N.Raviteja	427-431
76	Wholesale And Retail Store Management System - Mr K Siva Rama Krishna.Saranya Bala.Y .Triveni.V . Sai Divya	432-435

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CSE 2021

BigMart Sales Prediction Using Machine Learning Models

Pavan Kumar K.S.L [1a], Mahesh Sriramineni [1b], Venkateswar Reddy G [1c], Dr. Jayaprada G.L.N [2]

[1] *Department of CSE, Narasaraopeta Engineering College, Narasaraopet, AP, India*

[a] kslpavankumar007@gmail.com

[b] sriramanenimahesh@gmail.com

[c] gogireddy.venkateswarareddy111@gmail.com

[2] *Professor, Department of CSE, Narasaraopeta Engineering College, Narasaraopet, AP, India*

[2] gjayaprada74@gmail.com

Abstract

BigMart's sales dataset comprises of a large number of sales data for products collected by BigMart's data scientists across 10 different locations in various cities. Also, certain attributes of each product and store have been defined in the dataset. The aim of this Machine Learning project is to build a predictive model and find out the sales of each product at a particular store. Using this model, BigMart will try to understand the properties of products and stores which play a key role in increasing sales. Because some stores may not submit complete data due to technical difficulties, the data contains abnormalities, outliers, and missing numbers. As a result, proper treatment will be required. Dataset is preprocessed, analyzed and used to build the suitable model and evaluation is done based on root mean square error (RMSE).

Keywords: Data Exploration, Big Mart Data Set, Linear Regression Model, Hypothesis Generation, Data Cleaning, Lasso Regression, Ridge Regression Method, Random Forest Regressor.

1 Introduction

Sales Prediction is used to predict the availability of various items sold at various stores in various cities within a Big Mart Company. Predicting them by hand gets challenging when the volume of products and outlets grows dramatically. In terms of geography, time, and money, predicting the correct interest for an object is a huge marvel for the dealers. Because of capacity and cash constraints, merchants may be short on time or need to sell their things as soon as possible. As a result, an item's interest is determined by a variety of factors, including price, popularity, time, outlet type, outlet location, and item advertisement, among others.

When the number of components increases, it becomes physically difficult to anticipate deals. Demand forecasting is also closely linked to sales revenue. If dealers stock much more things than the interest, this may result in excess. when an item is popular, however, storing away fewer items to save on stock expenses will result in less revenue. As a result, Sales Prediction causes businesses to stock things based on predicted sales for the location and outlet type [2]. As a result, providing businesses with predicted item discounts and unique outlet locations encourages them to devise a strategy that allows them to sort and deliver their products more efficiently, reducing costs and increasing revenue.

Sales are crucial for every firm, and dealing with determining plays a critical role in running any business. Great anticipating aids in the development and improvement of business operations by broadening knowledge of the commercial centre. A normal deals gauge looks deeply into the events or conditions that recently occurred and then employs guesswork in terms of client acquisition, identifies insufficiencies and characteristics before establishing a budgetary limit as well as advertising strategies for the following year. At the end of the day, transactions determine forecasts based on previously available assets. A complete picture of the company's historical assets allows it to plan for future demands and improves its chances of success regardless of external factors.

Organizations that take deal anticipation as a critical advance will outperform those that do not. Stacking is currently seen as a two-level measurable process for acquiring information mining predictive methods. It is called two-level because stacking is done on two layers, with the base layer including at least one learning calculation and the top layer containing one learning calculation. Stacking is otherwise called Stacked Generalization. It essentially includes the preparation of the learning calculation present in the top layer to consolidate the expectations made by the calculations present in the base layer. To achieve a final forecast, all of the learning calculations are prepared using the big mart dataset in the first stage, and a combiner calculation is prepared using all of the expectations generated by the base layer calculations in the second step.

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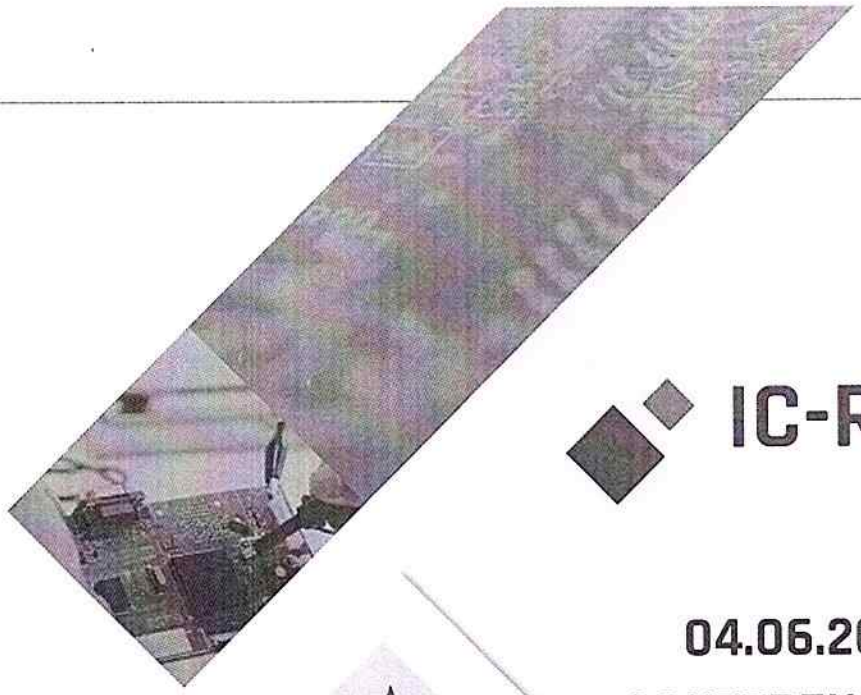

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Table of Content

SL.NO	PAPER TITLE	PAPER ID	PAGE NO
1	MULTI-BIT ERROR DETECTION AND CORRECTION USING THREE DIMENSIONAL PARITY FOR TCAM BASED FPGA	IC-EB-456001	1
2	INTERNET OF THINGS BASED EARLIER RECOGNITION AND INTIMATION OF WILD ANIMALS ATTACK ON FORMING LANDS	IC-EB-456002	5
3	FAKE NEWS DETECTION	IC-EB-456003	15
4	SMART SHOPPING CART SYSTEM USING RFID	IC-EB-456004	20
5	MULTI CLASS TEXT CLASSIFICATION FOR TELUGU NEWS ARTICLES USING TRIGRAM	IC-EB-456005	27
6	POWER AND PERFORMANCE OPTIMIZATION IN 16-BIT ALU USING POWER GATING TECHNIQUE	IC-EB-456006	32
7	IMPLEMENTATION OF OFDM SYSTEM AND ANALYSIS OF BER USING LABVIEW	IC-EB-456007	39
8	FEATURE RELEVANT VISUAL EXPLANATION FOR DIAGNOSIS OF COVID-19 INFECTION FROM CT SCAN IMAGES USING ITERATIVE CONVOLUTION NEURAL NETWORK MODEL	IC-EB-456008	45
9	SELF-LEARNING BRAILLE APPLICATION FOR VISUALLY IMPAIRED PEOPLE	IC-EB-456009	55
10	DETECTION OF DENTAL PANTAMOGRAMS JAWBONE CYSTS AND TUMOR BY USING IMAGE ENHANCEMENT TECHNIQUES	IC-EB-456010	61
11	LEAF DISEASE DETECTION AND ITS REMEDY USING CONVOLUTIONAL NEURAL NETWORK	IC-EB-456011	68
12	DIRECTION OF ARRIVAL ESTIMATION FOR UNIFORM LINEAR ANTENNA ARRAY USING MUSIC ALGORITHM	IC-EB-456012	73
13	DEEP LEARNING BASED HUMAN TO HUMAN INTERACTION DETECTION USING WI-FI SIGNALS	IC-EB-456013	80
14	ENERGY EFFICIENCY IMPROVING IN SENSOR NODE OF INTERNET OF THINGS USING MODIFIED LEACH PROTOCOL	IC-EB-456014	86
15	FOURIER MODIFIED DIRECT FINITE MELLIN TRANSFORM BASED TEMPLATE MATCHING APPROACH FOR PRINTED ODIYA NUMERAL RECOGNITION	IC-EB-456015	92
16	ULTRA LOW SOLAR POWER HARVESTER WITH MPPT FOR IOT SMART NODES	IC-EB-456016	97
17	BILLS AUTOMATION USING ROBOTICS PROCESSAUTOMATION	IC-EB-456017	104
18	EMAIL AUTOMATION USING ROBOTIC PROCESS AUTOMATION	IC-EB-456018	106
19	A BRIEF VIEW ON TELEMEDICINE IN TODAY'S COVID 19 SCENARIO - CHALLENGES AND OPPORTUNITIES IN INDIA	IC-EB-456019	109
20	A CRYPTOGRAPHIC SHARDING ACHIEVE STRIDE SCALING ABILITY	IC-EB-456020	117
21	3D REPRESENTATION OF HUMAN WORKOUTS WITH TEMPORAL ACTIVITY RECOGNITION	IC-EB-456021	126

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SL.NO	PAPER TITLE	PAPER ID	PAGE NO
22	ADVANCED ALTERING MODEL OF HEALTHCARE SYSTEM FOR IDENTIFYING PRE-CARDIAC EFFECT USING IOT	IC-EB-456022	134
23	AN EFFICIENT LIVER DISEASE PREDICTION MODEL USING MACHINE LEARNING ALGORITHMS	IC-EB-456023	139
24	BIGMART SALES PREDICTION USING ML	IC-EB-456024	148
25	BREAST CANCER DETECTION USING MACHINE LEARNING	IC-EB-456025	153
26	VISIBLE LIGHT COMMUNICATION FOR IMAGE TRANSMISSIONS	IC-EB-456026	164
27	CREDIT CARD FRAUD DETECTION - MACHINE LEARNING METHODS	IC-EB-456027	175
28	DESIGN AND IMPLEMENTATION OF PATIENT MONITORING ROBOT IN HOSPITALS	IC-EB-456028	190
29	DETECTION OF WHEAT SEED TYPE USING ML	IC-EB-456029	197
30	HEART ATTACK PREDICTION USING MACHINE LEARNING TECHNIQUES	IC-EB-456030	203
31	NANOTECHNOLOGY BASED EXTRACTION OF ZINC OXIDE USING AZDHIRATCHA INDICA	IC-EB-456031	211
32	MOBILE PRICE CLASSIFICATION	IC-EB-456032	216
33	IOT BASED NEONATAL HEALTHCARE DIAGNOSIS SYSTEM	IC-EB-456033	225
34	PREDICTION OF GLASS USAGE BY APPLYING MACHINE LEARNING	IC-EB-456034	232
35	PREDICTIVE ANALYSIS OF LIVER DISEASES	IC-EB-456035	240
36	THYROID DISEASE PREDICTION USING MACHINE LEARNING TECHNIQUES	IC-EB-456036	250
37	HAPTICS AND PATTERN CONTROLLED ROBOT	IC-EB-456037	258
38	SMART STREET LIGHT USING IOT	IC-EB-456038	266
39	ENACTMENT ON UPLINK AND DOWNLINK: MIMO - NOMA FOR 5G	IC-EB-456039	272
40	AIRLINE RESERVATION SYSTEM USING C PROGRAMMING	IC-EB-456040	282
41	ADVANCED ARTIFICIAL INTELLIGENCE APPLICATION FOR SMART CLASS DIGITAL TEACHING METHODOLOGY	IC-EB-456041	286
42	STRESS MONITORING SYSTEM USING EEG SENSORS	IC-EB-456042	293
43	SECURE CONSERVING MULTIPLE KEYWORD RANKED SEARCH OVER ENCRYPTED CLOUD DATA	IC-EB-456043	303
44	LIBRARY MANAGEMENT SYSTEM IN C PROGRAMMING	IC-EB-456044	309

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GUNTUR (DIST.) A.P.
IQAC

SL.NO	PAPER TITLE	PAPER ID	PAGE NO
45	AUTOMATED CRIMINAL IDENTIFICATION BY FACE RECOGNITION USING OPEN CV CLASSIFIER	IC-EB-456045	314
46	DYNAMIC HAND GESTURE USING MACHINE LEARNING TECHNIQUE	IC-EB-456046	321
47	WORKSALE-DESIGN AND DEVELOPMENT OF SAAS BASED SALES MANAGEMENT SYSTEM	IC-EB-456047	326
48	A NOVEL APPROACH FOR CONTACTLESS SCREENING OF COVID	IC-EB-456048	332
49	CLOUD BASED HIGHWAYS SAFETY SYSTEM THROUGH REAL TIME MONITORING OF DRIVER SLEEPINESS CONDITION	IC-EB-456049	337
50	SAFETY MONITORING SYSTEMS FOR COAL MINE USING WIRELESS NETWORKS	IC-EB-456050	343
51	ARTIFICIAL INTELLIGENCE-BASED SMART MIRROR (A.I.S.M)	IC-EB-456051	350
52	VEHICLE BLACK BOX SYSTEM USING RASPBERRY PI	IC-EB-456052	355
53	DESIGN AND IMPLEMENTATION OF 4-2 COMPRESSOR FOR MULTIPLIER APPLICATIONS	IC-EB-456053	360
54	INTELLIGENT CONTROL OF GRID CONNECTED HYBRID ENERGY SYSTEM WITH IMPROVED SEPIC CONVERTER	IC-EB-456054	369
55	BIDIRECTIONAL SEPIC-ZETA CONVERTER FOR BATTERY BASED GRID-TIED PV SYSTEM	IC-EB-456055	379
56	RECENT ADVANCEMENTS IN BIOMEDICAL ENGINEERING	IC-EB-456056	389
57	AIRIAL ROPE TRANSIT ROBOT FOR SURVEILLANCE CAPABILITY	IC-EB-456057	395
58	SEGMENTATION OF LUNG LESION FROM CT IMAGE	IC-EB-456058	400
59	IOT BASED TAMPERED ENERGY METER MONITORING.	IC-EB-456059	405
60	MACHINE LEARNING TECHNOLOGY USED FOR TOXIC LIQIUD DETECTION RESPONSE AND RECOVERY TIME ANALYSIS	IC-EB-456060	410
61	DESIGN OF MICRO STRIP ANTENNA FOR THE USE OF MOBILE APPLICATIONS	IC-EB-456061	415
62	MOTION OF CHARGED PARTICLES ELECTROMAGNETIC FIELD	IC-EB-456062	422
63	COMMUNICATION FOR DEAF AND DUMB USING GESTURE BASED CONTROL.	IC-EB-456063	429
64	DETECTION AND CLASSIFICATION OF SKIN DISEASE WITH THE HELP OF PI KIT	IC-EB-456064	436
65	SELF-LEARNING BRAILLE APPLICATION FOR VISUALLY IMPAIRED PEOPLE	IC-EB-456065	439
66	FEATURE RELEVANT VISUAL EXPLANATION FOR DIAGNOSIS OF COVID-19 INFECTION FROM CT SCAN IMAGES USING ITERATIVE CONVOLUTION NEURAL NETWORK MODEL	IC-EB-456066	445
67	STUDY ON DATA ANALYSIS OF POSTAL SECTION ROUTINE AND ITS IMPROVEMENT USING MACHINE LEARNING	IC-EB-456067	453

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SL.NO	PAPER TITLE	PAPER ID	PAGE NO
68	OVARIAN CANCER- SIGN.SYMPTOMS.STAGES AND TREATMENT	IC-EB-456068	461
69	SMART AGRICULTURE FIELD IRRIGATION SYSTEM USING SENSORS & GSM	IC-EB-456069	466
70	A STUDY ON DATA MINING APPLICATIONS IN HEALTHCARE SECTOR	IC-EB-456070	471
71	BATTERY CHARGE CONTROLLER USING LUO CONVERTER FOR THREE PHASE GRID TIED ELECTRIC VEHICLE SYSTEM	IC-EB-456071	475
72	CASCADED FUZZY LOGIC CONTROL OF PHOTOVOLTAIC FED DYNAMIC VOLTAGE RESTORER FOR POWER DISTRIBUTION SYSTEMS	IC-EB-456072	486
73	SOLAR INTEGRATED ZETA CONVERTER FOR DFIG BASED WIND ENERGY CONVERSION SYSTEM APPLICATIONS	IC-EB-456073	494
74	A SWITCHED BOOST LANDSMAN CONVERTER WITH ANFIS BASED MPPT FOR GRID CONNECTED PV SYSTEM	IC-EB-456074	505
75	SMART BIN	IC-EB-456075	515
76	AUTOMATIC ROOM LIGHT SYSTEM	IC-EB-456076	518
77	COMPARISON BETWEEN RECTANGULAR MICROSTRIP PATCH ANTENNA WITH AND WITHOUT DEFECTED GROUND STRUCTURE AT 1.85 GHZ	IC-EB-456077	522
78	WATER LEVEL INDICATOR	IC-EB-456078	527
79	INDUSTRY TEMPERATURE CONTROL SYSTEM	IC-EB-456079	530
80	SMART STREET LIGHT CONTROL SYSTEM	IC-EB-456080	533
81	PULSE RATE MEASUREMENT USING ARDUINO	IC-EB-456081	536
82	TANK WATER LEVEL INDICATOR	IC-EB-456082	540
83	REAL TIME DC MOTOR SPEED AND DIRECTION CONTROL	IC-EB-456083	543
84	SMART TRACKING SECURITY DEVICE FOR WOMEN SAFETY USING RASPBERRY PIE HARDWARE	IC-EB-456084	547
85	A COMPREHENSIVE STUDY ON RESPIRATORY PARAMETERS USING BLUETOOTH ENABLED MULTILAYERED COVID MASK_A PREVENTIVE MEASURE	IC-EB-456085	553
86	EVALUATION AND MODELING OF 3D RECONSTRUCTION OF NASAL BONE FRACTURE USING PHOTOGRAMMETRY METHOD TO TREAT FACIAL FRACTURES	IC-EB-456086	559
87	DESIGN AND DEVELOPMENT OF AN EFFECTIVE SMART GARBAGE SYSTEM USING THE INTERNET OF THINGS	IC-EB-456087	563

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An Efficient Liver Disease prediction model using machine learning algorithms

Dr.S.N.Thirumala Rao[1a)], Veluguri hema varalakshmi[2b)]

[1]*Professor, Department of CSE, Narasaraopeta Engineering College.*

[2]*Department of Computer Science & Engineering, Narasaraopeta Engineering College, Narasaraopet*

[a)]nagatirumalarao@gmail.com

[b)]hema.veluguri@gmail.com

ABSTRACT:*Accurate diagnostic reports are required for the identification of correct disease and treatment. However, expert specialist doctors are not always available in many parts of the world and more specifically in third world countries. Many diagnostic tests have been developed over a long period time to perform human disease identification. In many cases a single test or even several tests cannot exactly identify the correct disease. In this research paper, machine learning algorithms are used to identify whether patient has liver disease or not using different metrics like Age, Gender etc (medical data set). The main goal of this paper is to apply simple and less computational classification techniques like Logistic Regression, DecisionTree Classifier, Support Vector Machine (SVM), and Naïve Bayes Classifier and obtain best accuracy in order to predict liver patients.*

INTRODUCTION

With the passage of time, the world population is increasing at a very rapid speed and in the same way the type of complex diseases is also increasing. Therefore, the need for automated and accurate mechanism for classification of different diseases based on laboratory data is very crucial for survival of human being. Machine Learning techniques play a dominant role in disease diagnosis process[20][21].Actual identification of Liver disease is always being a very important but complex task for doctors. The identification of liver patient at the early stages of the disease (i.e., even with partial liver damage) is difficult. An early identification of liver problems will increase patient survival rate. For liver disease identification, analysis is performed with the help of several types of enzymes in the patient blood. In this regard, medical field is now gradually incorporating computational techniques in biology to automate various tasks including the disease classification problem. It is also worth mentioning thatin several cases the automated intelligent algorithm even outperform the accuracy of human experts.

In this paper, a simple machine learning approach i.e. Logistic Regression, Decision Tree Classifier, Random Forest Classifier etc are adopted toclassify liver patient (i.e., Liver Patient or Not Liver Patient) using patient gender and laboratory medical test data. The dataset was published on UCI machine learning repository as "Indian Liver Patient Records".

LITERATURE SERVEY

As per 2017 World Health Organization results, deaths caused by Liver Diseases in India touched 2,59,749 and it is 2.95% of total deaths and stands 63rd rank in the world. Now a day it is mostly because of alcohol and obesity. Every year approximately 10 lakh patients are diagnosed who are suffering with liver cirrhosis. Liver disease is the tenth most usual reason of deaths in India as stated by the studies of World Health Organization. The identification of Liver disease is a challenging task for doctors even though there are several tests have been developed. Conventional classification methods are used frequently in many automatic medical diagnosis tools

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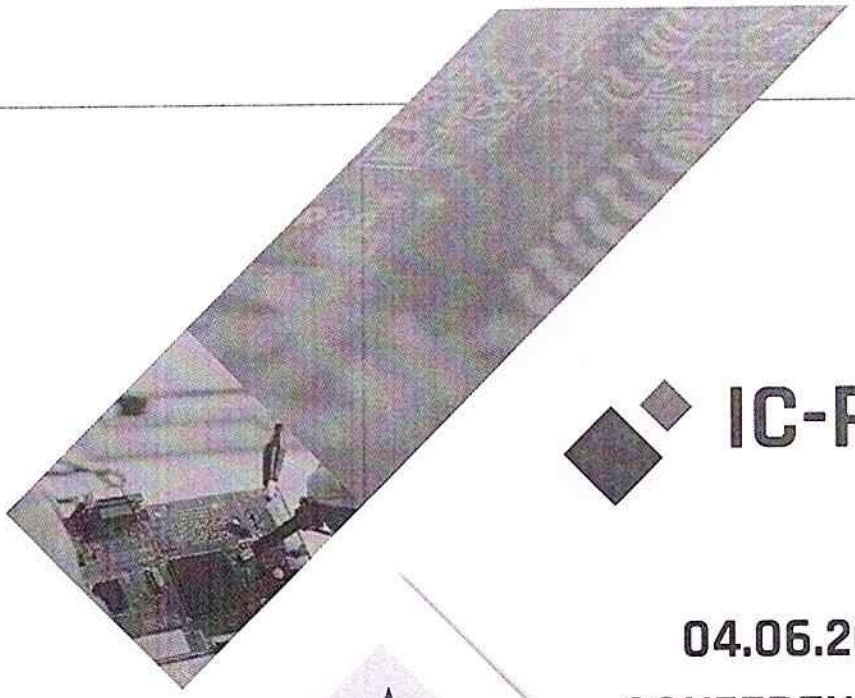

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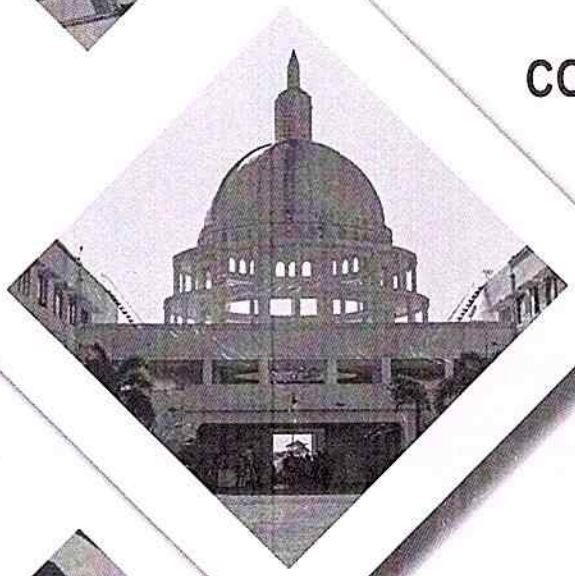

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Table of Content

SL.NO	PAPER TITLE	PAPER ID	PAGE NO
1	MULTI-BIT ERROR DETECTION AND CORRECTION USING THREE DIMENSIONAL PARITY FOR TCAM BASED FPGA	IC-EB-456001	1
2	INTERNET OF THINGS BASED EARLIER RECOGNITION AND INTIMATION OF WILD ANIMALS ATTACK ON FORMING LANDS	IC-EB-456002	5
3	FAKE NEWS DETECTION	IC-EB-456003	15
4	SMART SHOPPING CART SYSTEM USING RFID	IC-EB-456004	20
5	MULTI CLASS TEXT CLASSIFICATION FOR TELUGU NEWS ARTICLES USING TRIGRAM	IC-EB-456005	27
6	POWER AND PERFORMANCE OPTIMIZATION IN 16-BIT ALU USING POWER GATING TECHNIQUE	IC-EB-456006	32
7	IMPLEMENTATION OF OFDM SYSTEM AND ANALYSIS OF BER USING LABVIEW	IC-EB-456007	39
8	FEATURE RELEVANT VISUAL EXPLANATION FOR DIAGNOSIS OF COVID-19 INFECTION FROM CT SCAN IMAGES USING ITERATIVE CONVOLUTION NEURAL NETWORK MODEL	IC-EB-456008	45
9	SELF-LEARNING BRAILLE APPLICATION FOR VISUALLY IMPAIRED PEOPLE	IC-EB-456009	55
10	DETECTION OF DENTAL PANTAMOGRAMS JAWBONE CYSTS AND TUMOR BY USING IMAGE ENHANCEMENT TECHNIQUES	IC-EB-456010	61
11	LEAF DISEASE DETECTION AND ITS REMEDY USING CONVOLUTIONAL NEURAL NETWORK	IC-EB-456011	68
12	DIRECTION OF ARRIVAL ESTIMATION FOR UNIFORM LINEAR ANTENNA ARRAY USING MUSIC ALGORITHM	IC-EB-456012	73
13	DEEP LEARNING BASED HUMAN TO HUMAN INTERACTION DETECTION USING WI-FI SIGNALS	IC-EB-456013	80
14	ENERGY EFFICIENCY IMPROVING IN SENSOR NODE OF INTERNET OF THINGS USING MODIFIED LEACH PROTOCOL	IC-EB-456014	86
15	FOURIER MODIFIED DIRECT FINITE MELLIN TRANSFORM BASED TEMPLATE MATCHING APPROACH FOR PRINTED ODIYA NUMERAL RECOGNITION	IC-EB-456015	92
16	ULTRA LOW SOLAR POWER HARVESTER WITH MPPT FOR IOT SMART NODES	IC-EB-456016	97
17	BILLS AUTOMATION USING ROBOTICS PROCESSAUTOMATION	IC-EB-456017	104
18	EMAIL AUTOMATION USING ROBOTIC PROCESS AUTOMATION	IC-EB-456018	106
19	A BRIEF VIEW ON TELEMEDICINE IN TODAY'S COVID 19 SCENARIO - CHALLENGES AND OPPORTUNITIES IN INDIA	IC-EB-456019	109
20	A CRYPTOGRAPHIC SHARDING ACHIEVE STRIDE SCALING ABILITY	IC-EB-456020	117
21	3D REPRESENTATION OF HUMAN WORKOUTS WITH TEMPORAL ACTIVITY RECOGNITION	IC-EB-456021	126

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SL.NO	PAPER TITLE	PAPER ID	PAGE NO
22	ADVANCED ALTERING MODEL OF HEALTHCARE SYSTEM FOR IDENTIFYING PRE-CARDIAC EFFECT USING IOT	IC-EB-456022	134
23	AN EFFICIENT LIVER DISEASE PREDICTION MODEL USING MACHINE LEARNING ALGORITHMS	IC-EB-456023	139
24	BIGMART SALES PREDICTION USING ML	IC-EB-456024	148
25	BREAST CANCER DETECTION USING MACHINE LEARNING	IC-EB-456025	153
26	VISIBLE LIGHT COMMUNICATION FOR IMAGE TRANSMISSIONS	IC-EB-456026	164
27	CREDIT CARD FRAUD DETECTION - MACHINE LEARNING METHODS	IC-EB-456027	175
28	DESIGN AND IMPLEMENTATION OF PATIENT MONITORING ROBOT IN HOSPITALS	IC-EB-456028	190
29	DETECTION OF WHEAT SEED TYPE USING ML	IC-EB-456029	197
30	HEART ATTACK PREDICTION USING MACHINE LEARNING TECHNIQUES	IC-EB-456030	203
31	NANOTECHNOLOGY BASED EXTRACTION OF ZINC OXIDE USING AZDHIRATCHA INDICA	IC-EB-456031	211
32	MOBILE PRICE CLASSIFICATION	IC-EB-456032	216
33	IOT BASED NEONATAL HEALTHCARE DIAGNOSIS SYSTEM	IC-EB-456033	225
34	PREDICTION OF GLASS USAGE BY APPLYING MACHINE LEARNING	IC-EB-456034	232
35	PREDICTIVE ANALYSIS OF LIVER DISEASES	IC-EB-456035	240
36	THYROID DISEASE PREDICTION USING MACHINE LEARNING TECHNIQUES	IC-EB-456036	250
37	HAPTICS AND PATTERN CONTROLLED ROBOT	IC-EB-456037	258
38	SMART STREET LIGHT USING IOT	IC-EB-456038	266
39	ENACTMENT ON UPLINK AND DOWNLINK: MIMO - NOMA FOR 5G	IC-EB-456039	272
40	AIRLINE RESERVATION SYSTEM USING C PROGRAMMING	IC-EB-456040	282
41	ADVANCED ARTIFICIAL INTELLIGENCE APPLICATION FOR SMART CLASS DIGITAL TEACHING METHODOLOGY	IC-EB-456041	286
42	STRESS MONITORING SYSTEM USING EEG SENSORS	IC-EB-456042	293
43	SECURE CONSERVING MULTIPLE KEYWORD RANKED SEARCH OVER ENCRYPTED CLOUD DATA	IC-EB-456043	303
44	LIBRARY MANAGEMENT SYSTEM IN C PROGRAMMING	IC-EB-456044	309

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SL.NO	PAPER TITLE	PAPER ID	PAGE NO
45	AUTOMATED CRIMINAL IDENTIFICATION BY FACE RECOGNITION USING OPEN CV CLASSIFIER	IC-EB-456045	314
46	DYNAMIC HAND GESTURE USING MACHINE LEARNING TECHNIQUE	IC-EB-456046	321
47	WORKSALE-DESIGN AND DEVELOPMENT OF SAAS BASED SALES MANAGEMENT SYSTEM	IC-EB-456047	326
48	A NOVEL APPROACH FOR CONTACTLESS SCREENING OF COVID	IC-EB-456048	332
49	CLOUD BASED HIGHWAYS SAFETY SYSTEM THROUGH REAL TIME MONITORING OF DRIVER SLEEPINESS CONDITION	IC-EB-456049	337
50	SAFETY MONITORING SYSTEMS FOR COAL MINE USING WIRELESS NETWORKS	IC-EB-456050	343
51	ARTIFICIAL INTELLIGENCE-BASED SMART MIRROR (A.I.S.M)	IC-EB-456051	350
52	VEHICLE BLACK BOX SYSTEM USING RASPBERRY PI	IC-EB-456052	355
53	DESIGN AND IMPLEMENTATION OF 4-2 COMPRESSOR FOR MULTIPLIER APPLICATIONS	IC-EB-456053	360
54	INTELLIGENT CONTROL OF GRID CONNECTED HYBRID ENERGY SYSTEM WITH IMPROVED SEPIC CONVERTER	IC-EB-456054	369
55	BIDIRECTIONAL SEPIC-ZETA CONVERTER FOR BATTERY BASED GRID-TIED PV SYSTEM	IC-EB-456055	379
56	RECENT ADVANCEMENTS IN BIOMEDICAL ENGINEERING	IC-EB-456056	389
57	AIRIAL ROPE TRANSIT ROBOT FOR SURVEILLANCE CAPABILITY	IC-EB-456057	395
58	SEGMENTATION OF LUNG LESION FROM CT IMAGE	IC-EB-456058	400
59	IOT BASED TAMPERED ENERGY METER MONITORING.	IC-EB-456059	405
60	MACHINE LEARNING TECHNOLOGY USED FOR TOXIC LIQIUD DETECTION RESPONSE AND RECOVERY TIME ANALYSIS	IC-EB-456060	410
61	DESIGN OF MICRO STRIP ANTENNA FOR THE USE OF MOBILE APPLICATIONS	IC-EB-456061	415
62	MOTION OF CHARGED PARTICLES ELECTROMAGNETIC FIELD	IC-EB-456062	422
63	COMMUNICATION FOR DEAF AND DUMB USING GESTURE BASED CONTROL.	IC-EB-456063	429
64	DETECTION AND CLASSIFICATION OF SKIN DISEASE WITH THE HELP OF PI KIT	IC-EB-456064	436
65	SELF-LEARNING BRAILLE APPLICATION FOR VISUALLY IMPAIRED PEOPLE	IC-EB-456065	439
66	FEATURE RELEVANT VISUAL EXPLANATION FOR DIAGNOSIS OF COVID-19 INFECTION FROM CT SCAN IMAGES USING ITERATIVE CONVOLUTION NEURAL NETWORK MODEL	IC-EB-456066	445
67	STUDY ON DATA ANALYSIS OF POSTAL SECTION ROUTINE AND ITS IMPROVEMENT USING MACHINE LEARNING	IC-EB-456067	453

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SL.NO	PAPER TITLE	PAPER ID	PAGE NO
68	OVARIAN CANCER- SIGN,SYMPTOMS,STAGES AND TREATMENT	IC-EB-456068	461
69	SMART AGRICULTURE FIELD IRRIGATION SYSTEM USING SENSORS & GSM	IC-EB-456069	466
70	A STUDY ON DATA MINING APPLICATIONS IN HEALTHCARE SECTOR	IC-EB-456070	471
71	BATTERY CHARGE CONTROLLER USING LUO CONVERTER FOR THREE PHASE GRID TIED ELECTRIC VEHICLE SYSTEM	IC-EB-456071	475
72	CASCADED FUZZY LOGIC CONTROL OF PHOTOVOLTAIC FED DYNAMIC VOLTAGE RESTORER FOR POWER DISTRIBUTION SYSTEMS	IC-EB-456072	486
73	SOLAR INTEGRATED ZETA CONVERTER FOR DFIG BASED WIND ENERGY CONVERSION SYSTEM APPLICATIONS	IC-EB-456073	494
74	A SWITCHED BOOST LANDSMAN CONVERTER WITH ANFIS BASED MPPT FOR GRID CONNECTED PV SYSTEM	IC-EB-456074	505
75	SMART BIN	IC-EB-456075	515
76	AUTOMATIC ROOM LIGHT SYSTEM	IC-EB-456076	518
77	COMPARISON BETWEEN RECTANGULAR MICROSTRIP PATCH ANTENNA WITH AND WITHOUT DEFECTED GROUND STRUCTURE AT 1.85 GHZ	IC-EB-456077	522
78	WATER LEVEL INDICATOR	IC-EB-456078	527
79	INDUSTRY TEMPERATURE CONTROL SYSTEM	IC-EB-456079	530
80	SMART STREET LIGHT CONTROL SYSTEM	IC-EB-456080	533
81	PULSE RATE MEASUREMENT USING ARDUINO	IC-EB-456081	536
82	TANK WATER LEVEL INDICATOR	IC-EB-456082	540
83	REAL TIME DC MOTOR SPEED AND DIRECTION CONTROL	IC-EB-456083	543
84	SMART TRACKING SECURITY DEVICE FOR WOMEN SAFETY USING RASPBERRY PIE HARDWARE	IC-EB-456084	547
85	A COMPREHENSIVE STUDY ON RESPIRATORY PARAMETERS USING BLUETOOTH ENABLED MULTILAYERED COVID MASK_A PREVENTIVE MEASURE	IC-EB-456085	553
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87	DESIGN AND DEVELOPMENT OF AN EFFECTIVE SMART GARBAGE SYSTEM USING THE INTERNET OF THINGS	IC-EB-456087	563

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BIGMART SALES PREDICTION USING ML

Dr.S.N.Thirumala Rao[1a)], Mrudula Kaipu[2b)]

[1]*Professor, Department of CSE, Narasaraopeta Engineering College.*

[2]*Department of Computer Science & Engineering, Narasaraopeta Engineering College, Narasaraopet*

[a)]nagatirumalarao@gmail.com

[b)]mrudula.kaipu20@gmail.com

ABSTRACT:bigmart sales dataset contains numerous numbers of deals for items across10 unique outlets in various urban areas which were gathered by information researchers at bigmart. additionally, certain characteristics of every item and store have been characterized in the dataset. the point of this information science venture is to fabricate a prescient model and discover the deals of every item at a specific store. utilizing the model, bigmart will attempt to comprehend the properties of the items and stores which assume a key role in expanding deals. the information has inconsistencies, exception, missing qualities as certain stores don't report all the information because of specialized glitches. consequently, it will be required to treat them likewise.

INTRODUCTION

Step by Step rivalry among different shopping centers just as large store is getting progressively genuine and forceful just because of the fast development of the world wide shopping centers and on-line shopping. Each shopping Centre or store is attempting to give customized and brief timeframe offers for drawing in more clients relying on the day. with the end goal that the volume of deals for everything can be anticipated for stock administration of the association, coordinators and transport administration, and so on.Present AI calculation are complex and give strategies to foresee or figure the future interest of deals for an association, which additionally helps in beating the modest accessibility of registering and capacity frameworks. Right now, are tending to the issue of enormous bazaar deals expectation or estimating of a thing on client's future interest in different large shop stores across different areas and items dependent on the past record. Different AI calculations like direct relapse examinations, irregular timberland, and so on are utilized for expectations or determining of deals volume.

LITERATURESURVEY

The factual and computational strategies are concentrated in additionally this paper explains the computerized procedure of information securing.AIis where a machine will gain from information as measurably or computationally strategy and procedure information obtaining from encounters [2,6].Different AI (ML) systems with their application in different areas have been introduced in [2]. Machine Learning plays a major role in data analysis process[15,17].Machine Learning techniques play a dominant role in predicting customer behaviour [13,14].

ActualPat Langley and Herbert A et.al., [7] brought up most generally utilized information mining method in the field of business is the RuleInduction (RI) system when contrasted with other information mining strategies. Whereas deal forecast of a pharmaceutical circulation organization has been portrayed in [10,12].Additionally this paper center around two issues: (i) stock state ought not to experience out of the stock and (ii) it evades the client disappointment by anticipating the deals that deals with the stock degree ofprescriptions.

Treatment of footwear deal function in a timeframe has been tended to centers on utilizing neural system for anticipating of week after week retail deals, which decline the vulnerability present in the momentary arranging

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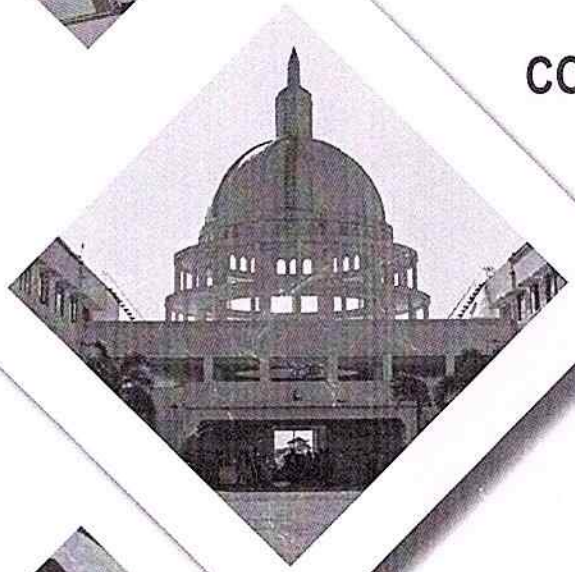

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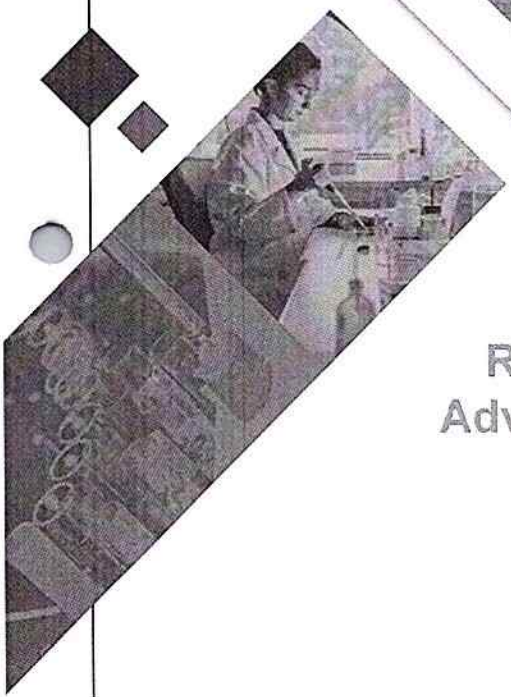

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Table of Content

SL.NO	PAPER TITLE	PAPER ID	PAGE NO
1	MULTI-BIT ERROR DETECTION AND CORRECTION USING THREE DIMENSIONAL PARITY FOR TCAM BASED FPGA	IC-EB-456001	1
2	INTERNET OF THINGS BASED EARLIER RECOGNITION AND INTIMATION OF WILD ANIMALS ATTACK ON FORMING LANDS	IC-EB-456002	5
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23	AN EFFICIENT LIVER DISEASE PREDICTION MODEL USING MACHINE LEARNING ALGORITHMS	IC-EB-456023	139
24	BIGMART SALES PREDICTION USING ML	IC-EB-456024	148
25	BREAST CANCER DETECTION USING MACHINE LEARNING	IC-EB-456025	153
26	VISIBLE LIGHT COMMUNICATION FOR IMAGE TRANSMISSIONS	IC-EB-456026	164
27	CREDIT CARD FRAUD DETECTION - MACHINE LEARNING METHODS	IC-EB-456027	175
28	DESIGN AND IMPLEMENTATION OF PATIENT MONITORING ROBOT IN HOSPITALS	IC-EB-456028	190
29	DETECTION OF WHEAT SEED TYPE USING ML	IC-EB-456029	197
30	HEART ATTACK PREDICTION USING MACHINE LEARNING TECHNIQUES	IC-EB-456030	203
31	NANOTECHNOLOGY BASED EXTRACTION OF ZINC OXIDE USING AZDHIRATCHA INDICA	IC-EB-456031	211
32	MOBILE PRICE CLASSIFICATION	IC-EB-456032	216
33	IOT BASED NEONATAL HEALTHCARE DIAGNOSIS SYSTEM	IC-EB-456033	225
34	PREDICTION OF GLASS USAGE BY APPLYING MACHINE LEARNING	IC-EB-456034	232
35	PREDICTIVE ANALYSIS OF LIVER DISEASES	IC-EB-456035	240
36	THYROID DISEASE PREDICTION USING MACHINE LEARNING TECHNIQUES	IC-EB-456036	250
37	HAPTICS AND PATTERN CONTROLLED ROBOT	IC-EB-456037	258
38	SMART STREET LIGHT USING IOT	IC-EB-456038	266
39	ENACTMENT ON UPLINK AND DOWNLINK: MIMO - NOMA FOR 5G	IC-EB-456039	272
40	AIRLINE RESERVATION SYSTEM USING C PROGRAMMING	IC-EB-456040	282
41	ADVANCED ARTIFICIAL INTELLIGENCE APPLICATION FOR SMART CLASS DIGITAL TEACHING METHODOLOGY	IC-EB-456041	286
42	STRESS MONITORING SYSTEM USING EEG SENSORS	IC-EB-456042	293
43	SECURE CONSERVING MULTIPLE KEYWORD RANKED SEARCH OVER ENCRYPTED CLOUD DATA	IC-EB-456043	303
44	LIBRARY MANAGEMENT SYSTEM IN C PROGRAMMING	IC-EB-456044	309

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SL.NO	PAPER TITLE	PAPER ID	PAGE NO
45	AUTOMATED CRIMINAL IDENTIFICATION BY FACE RECOGNITION USING OPEN CV CLASSIFIER	IC-EB-456045	314
46	DYNAMIC HAND GESTURE USING MACHINE LEARNING TECHNIQUE	IC-EB-456046	321
47	WORKSALE-DESIGN AND DEVELOPMENT OF SAAS BASED SALES MANAGEMENT SYSTEM	IC-EB-456047	326
48	A NOVEL APPROACH FOR CONTACTLESS SCREENING OF COVID	IC-EB-456048	332
49	CLOUD BASED HIGHWAYS SAFETY SYSTEM THROUGH REAL TIME MONITORING OF DRIVER SLEEPINESS CONDITION	IC-EB-456049	337
50	SAFETY MONITORING SYSTEMS FOR COAL MINE USING WIRELESS NETWORKS	IC-EB-456050	343
51	ARTIFICIAL INTELLIGENCE-BASED SMART MIRROR (A.I.S.M)	IC-EB-456051	350
52	VEHICLE BLACK BOX SYSTEM USING RASPBERRY PI	IC-EB-456052	355
53	DESIGN AND IMPLEMENTATION OF 4-2 COMPRESSOR FOR MULTIPLIER APPLICATIONS	IC-EB-456053	360
54	INTELLIGENT CONTROL OF GRID CONNECTED HYBRID ENERGY SYSTEM WITH IMPROVED SEPIC CONVERTER	IC-EB-456054	369
55	BIDIRECTIONAL SEPIC-ZETA CONVERTER FOR BATTERY BASED GRID-TIED PV SYSTEM	IC-EB-456055	379
56	RECENT ADVANCEMENTS IN BIOMEDICAL ENGINEERING	IC-EB-456056	389
57	AIRIAL ROPE TRANSIT ROBOT FOR SURVEILLANCE CAPABILITY	IC-EB-456057	395
58	SEGMENTATION OF LUNG LESION FROM CT IMAGE	IC-EB-456058	400
59	IOT BASED TAMPERED ENERGY METER MONITORING.	IC-EB-456059	405
60	MACHINE LEARNING TECHNOLOGY USED FOR TOXIC LIQIUD DETECTION RESPONSE AND RECOVERY TIME ANALYSIS	IC-EB-456060	410
61	DESIGN OF MICRO STRIP ANTENNA FOR THE USE OF MOBILE APPLICATIONS	IC-EB-456061	415
62	MOTION OF CHARGED PARTICLES ELECTROMAGNETIC FIELD	IC-EB-456062	422
63	COMMUNICATION FOR DEAF AND DUMB USING GESTURE BASED CONTROL.	IC-EB-456063	429
64	DETECTION AND CLASSIFICATION OF SKIN DISEASE WITH THE HELP OF PI KIT	IC-EB-456064	436
65	SELF-LEARNING BRAILLE APPLICATION FOR VISUALLY IMPAIRED PEOPLE	IC-EB-456065	439
66	FEATURE RELEVANT VISUAL EXPLANATION FOR DIAGNOSIS OF COVID-19 INFECTION FROM CT SCAN IMAGES USING ITERATIVE CONVOLUTION NEURAL NETWORK MODEL	IC-EB-456066	445
67	STUDY ON DATA ANALYSIS OF POSTAL SECTION ROUTINE AND ITS IMPROVEMENT USING MACHINE LEARNING	IC-EB-456067	453

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68	OVARIAN CANCER- SIGN,SYMPTOMS,STAGES AND TREATMENT	IC-EB-456068	461
69	SMART AGRICULTURE FIELD IRRIGATION SYSTEM USING SENSORS & GSM	IC-EB-456069	466
70	A STUDY ON DATA MINING APPLICATIONS IN HEALTHCARE SECTOR	IC-EB-456070	471
71	BATTERY CHARGE CONTROLLER USING LUO CONVERTER FOR THREE PHASE GRID TIED ELECTRIC VEHICLE SYSTEM	IC-EB-456071	475
72	CASCADED FUZZY LOGIC CONTROL OF PHOTOVOLTAIC FED DYNAMIC VOLTAGE RESTORER FOR POWER DISTRIBUTION SYSTEMS	IC-EB-456072	486
73	SOLAR INTEGRATED ZETA CONVERTER FOR DFIG BASED WIND ENERGY CONVERSION SYSTEM APPLICATIONS	IC-EB-456073	494
74	A SWITCHED BOOST LANDSMAN CONVERTER WITH ANFIS BASED MPPT FOR GRID CONNECTED PV SYSTEM	IC-EB-456074	505
75	SMART BIN	IC-EB-456075	515
76	AUTOMATIC ROOM LIGHT SYSTEM	IC-EB-456076	518
77	COMPARISON BETWEEN RECTANGULAR MICROSTRIP PATCH ANTENNA WITH AND WITHOUT DEFECTED GROUND STRUCTURE AT 1.85 GHZ	IC-EB-456077	522
78	WATER LEVEL INDICATOR	IC-EB-456078	527
79	INDUSTRY TEMPERATURE CONTROL SYSTEM	IC-EB-456079	530
80	SMART STREET LIGHT CONTROL SYSTEM	IC-EB-456080	533
81	PULSE RATE MEASUREMENT USING ARDUINO	IC-EB-456081	536
82	TANK WATER LEVEL INDICATOR	IC-EB-456082	540
83	REAL TIME DC MOTOR SPEED AND DIRECTION CONTROL	IC-EB-456083	543
84	SMART TRACKING SECURITY DEVICE FOR WOMEN SAFETY USING RASPBERRY PIE HARDWARE	IC-EB-456084	547
85	A COMPREHENSIVE STUDY ON RESPIRATORY PARAMETERS USING BLUETOOTH ENABLED MULTILAYERED COVID MASK_A PREVENTIVE MEASURE	IC-EB-456085	553
86	EVALUATION AND MODELING OF 3D RECONSTRUCTION OF NASAL BONE FRACTURE USING PHOTOGRAMMETRY METHOD TO TREAT FACIAL FRACTURES	IC-EB-456086	559
87	DESIGN AND DEVELOPMENT OF AN EFFECTIVE SMART GARBAGE SYSTEM USING THE INTERNET OF THINGS	IC-EB-456087	563

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Predictive Analysis of Liver Diseases

Dr.S.N.Thirumala Rao[1a)], M.Sireesha[2b)], Indu Niharika Garlapati[3c)],

[1]*Professor, Department of CSE, Narasaraopeta Engineering College.*

[2]*Asst.Professor Department of CSE, Narasaraopeta Engineering College.*

[3]*Department ofComputer Science & Engineering, Narasaraopeta Engineering College, Narasaraopet*

[a)]nagatirumalarao@gmail.com
[b)]moturisireesha@nrtec.in,
[c)]indugarlapati012@gmail.com,

Abstract: liver disease prediction system is developed to predict human liver disease. for humans, liver is the main organ. itlies inside the abdomen's right upper quadrant. preliminary diagnosis of a liver disease is critical for successful care. itis a difficult job, as medical science requires a great deal of expertise and experience to diagnose the disease in the early stages using conventional methods. machine learning algorithm is used to solve this problem. machine learning algorithms can also be used to find hidden diagnostic information and to make effective decisions. so, the project also targets to compare different algorithms of machine learning. thissystem's interface is designed using python that will be ready for use in the medical center.

keywords: liver disease, machine learning, prediction, algorithm.

1. INTRODUCTION

Liver disease is one of the main causes of death that exists in both the world and India. Many of the major causes that cause damage to the liver are infections, smoking, drinking, etc. In some cases,theconditioncanalsobeattributedtoinheritance.Diarrhea,lossofappetite,fatigueandmany more are basic signs of liverfailure.

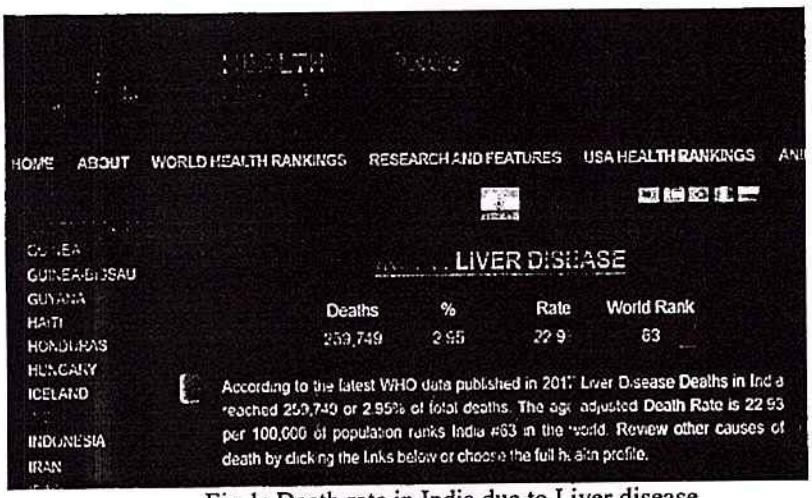

Fig 1: Death rate in India due to Liver disease

From Fig 1 we can observe that the liver diseases have grown rapidly over the past few decadestobecomeoneoftheworld'sleadingcausesofdeathandillness.AccordingtotheGlobal Burden of Disease report, more than 2 million deaths in 2010 were due to major liver diseases including acute hepatitis, cirrhosis, and liver cancer, which accounted for about 4 percent of all deathsworldwide.

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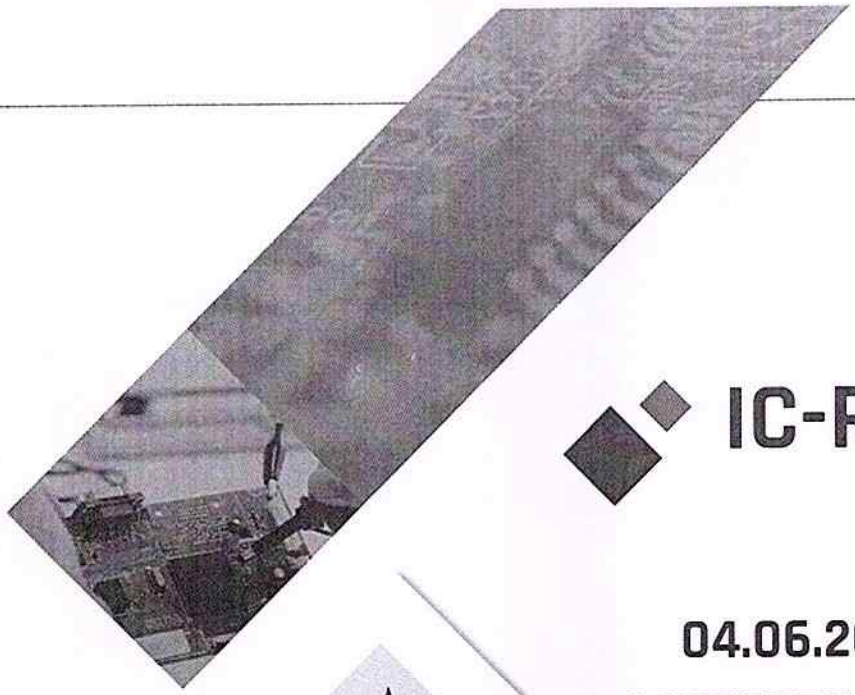

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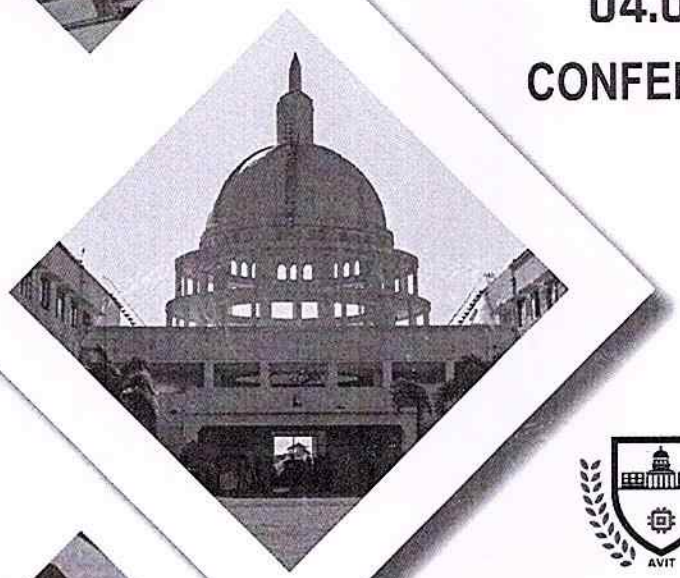

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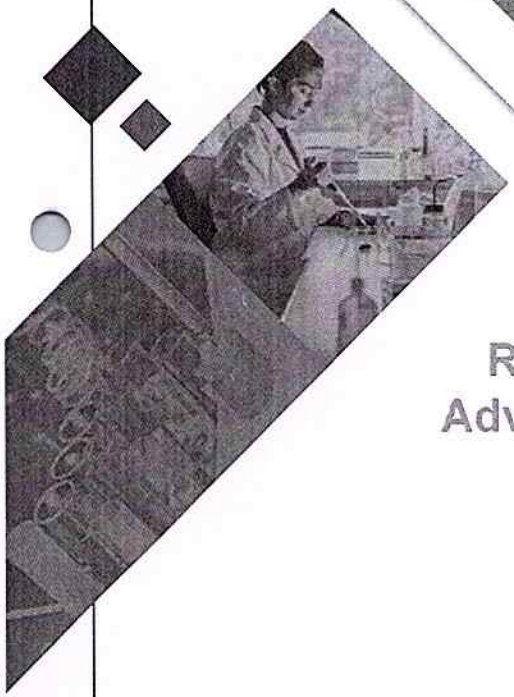

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Table of Content

SL.NO	PAPER TITLE	PAPER ID	PAGE NO
1	MULTI-BIT ERROR DETECTION AND CORRECTION USING THREE DIMENSIONAL PARITY FOR TCAM BASED FPGA	IC-EB-456001	1
2	INTERNET OF THINGS BASED EARLIER RECOGNITION AND INTIMATION OF WILD ANIMALS ATTACK ON FORMING LANDS	IC-EB-456002	5
3	FAKE NEWS DETECTION	IC-EB-456003	15
4	SMART SHOPPING CART SYSTEM USING RFID	IC-EB-456004	20
5	MULTI CLASS TEXT CLASSIFICATION FOR TELUGU NEWS ARTICLES USING TRIGRAM	IC-EB-456005	27
6	POWER AND PERFORMANCE OPTIMIZATION IN 16-BIT ALU USING POWER GATING TECHNIQUE	IC-EB-456006	32
7	IMPLEMENTATION OF OFDM SYSTEM AND ANALYSIS OF BER USING LABVIEW	IC-EB-456007	39
8	FEATURE RELEVANT VISUAL EXPLANATION FOR DIAGNOSIS OF COVID-19 INFECTION FROM CT SCAN IMAGES USING ITERATIVE CONVOLUTION NEURAL NETWORK MODEL	IC-EB-456008	45
9	SELF-LEARNING BRAILLE APPLICATION FOR VISUALLY IMPAIRED PEOPLE	IC-EB-456009	55
10	DETECTION OF DENTAL PANTAMOGRAMS JAWBONE CYSTS AND TUMOR BY USING IMAGE ENHANCEMENT TECHNIQUES	IC-EB-456010	61
11	LEAF DISEASE DETECTION AND ITS REMEDY USING CONVOLUTIONAL NEURAL NETWORK	IC-EB-456011	68
12	DIRECTION OF ARRIVAL ESTIMATION FOR UNIFORM LINEAR ANTENNA ARRAY USING MUSIC ALGORITHM	IC-EB-456012	73
13	DEEP LEARNING BASED HUMAN TO HUMAN INTERACTION DETECTION USING WI-FI SIGNALS	IC-EB-456013	80
14	ENERGY EFFICIENCY IMPROVING IN SENSOR NODE OF INTERNET OF THINGS USING MODIFIED LEACH PROTOCOL	IC-EB-456014	86
15	FOURIER MODIFIED DIRECT FINITE MELLIN TRANSFORM BASED TEMPLATE MATCHING APPROACH FOR PRINTED ODIYA NUMERAL RECOGNITION	IC-EB-456015	92
16	ULTRA LOW SOLAR POWER HARVESTER WITH MPPT FOR IOT SMART NODES	IC-EB-456016	97
17	BILLS AUTOMATION USING ROBOTICS PROCESSAUTOMATION	IC-EB-456017	104
18	EMAIL AUTOMATION USING ROBOTIC PROCESS AUTOMATION	IC-EB-456018	106
19	A BRIEF VIEW ON TELEMEDICINE IN TODAY'S COVID 19 SCENARIO - CHALLENGES AND OPPORTUNITIES IN INDIA	IC-EB-456019	109
20	A CRYPTOGRAPHIC SHARDING ACHIEVE STRIDE SCALING ABILITY	IC-EB-456020	117
21	3D REPRESENTATION OF HUMAN WORKOUTS WITH TEMPORAL ACTIVITY RECOGNITION	IC-EB-456021	126

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Guntur (Dist.), A.P.

SL.NO	PAPER TITLE	PAPER ID	PAGE NO
22	ADVANCED ALTERING MODEL OF HEALTHCARE SYSTEM FOR IDENTIFYING PRE-CARDIAC EFFECT USING IOT	IC-EB-456022	134
23	AN EFFICIENT LIVER DISEASE PREDICTION MODEL USING MACHINE LEARNING ALGORITHMS	IC-EB-456023	139
24	BIGMART SALES PREDICTION USING ML	IC-EB-456024	148
25	BREAST CANCER DETECTION USING MACHINE LEARNING	IC-EB-456025	153
26	VISIBLE LIGHT COMMUNICATION FOR IMAGE TRANSMISSIONS	IC-EB-456026	164
27	CREDIT CARD FRAUD DETECTION - MACHINE LEARNING METHODS	IC-EB-456027	175
28	DESIGN AND IMPLEMENTATION OF PATIENT MONITORING ROBOT IN HOSPITALS	IC-EB-456028	190
29	DETECTION OF WHEAT SEED TYPE USING ML	IC-EB-456029	197
30	HEART ATTACK PREDICTION USING MACHINE LEARNING TECHNIQUES	IC-EB-456030	203
31	NANOTECHNOLOGY BASED EXTRACTION OF ZINC OXIDE USING AZDHIRATCHA INDICA	IC-EB-456031	211
32	MOBILE PRICE CLASSIFICATION	IC-EB-456032	216
33	IOT BASED NEONATAL HEALTHCARE DIAGNOSIS SYSTEM	IC-EB-456033	225
34	PREDICTION OF GLASS USAGE BY APPLYING MACHINE LEARNING	IC-EB-456034	232
35	PREDICTIVE ANALYSIS OF LIVER DISEASES	IC-EB-456035	240
36	THYROID DISEASE PREDICTION USING MACHINE LEARNING TECHNIQUES	IC-EB-456036	250
37	HAPTICS AND PATTERN CONTROLLED ROBOT	IC-EB-456037	258
38	SMART STREET LIGHT USING IOT	IC-EB-456038	266
39	ENACTMENT ON UPLINK AND DOWNLINK: MIMO - NOMA FOR 5G	IC-EB-456039	272
40	AIRLINE RESERVATION SYSTEM USING C PROGRAMMING	IC-EB-456040	282
41	ADVANCED ARTIFICIAL INTELLIGENCE APPLICATION FOR SMART CLASS DIGITAL TEACHING METHODOLOGY	IC-EB-456041	286
42	STRESS MONITORING SYSTEM USING EEG SENSORS	IC-EB-456042	293
43	SECURE CONSERVING MULTIPLE KEYWORD RANKED SEARCH OVER ENCRYPTED CLOUD DATA	IC-EB-456043	303
44	LIBRARY MANAGEMENT SYSTEM IN C PROGRAMMING	IC-EB-456044	309

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52	VEHICLE BLACK BOX SYSTEM USING RASPBERRY PI	IC-EB-456052	355
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64	DETECTION AND CLASSIFICATION OF SKIN DISEASE WITH THE HELP OF PI KIT	IC-EB-456064	436
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79	INDUSTRY TEMPERATURE CONTROL SYSTEM	IC-EB-456079	530
80	SMART STREET LIGHT CONTROL SYSTEM	IC-EB-456080	533
81	PULSE RATE MEASUREMENT USING ARDUINO	IC-EB-456081	536
82	TANK WATER LEVEL INDICATOR	IC-EB-456082	540
83	REAL TIME DC MOTOR SPEED AND DIRECTION CONTROL	IC-EB-456083	543
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DETECTION OF WHEAT SEED TYPE USING ML

Dr. B. Jhansi Vazrama[1a)], M. Sai Venkat[2b)]

[1]Professor, Department of Computer Science & Engineering, Narasaraopeta Engineering College, Narasaraopet, Andhrapradesh, India.
[2]Student,Department of Computer Science & Engineering, Narasaraopeta Engineering College, Narasaraopet, Andhrapradesh, India.

[a)]jhansi.bolla@nrtec.in
[b)]Saivenkat.r.1998@gmail.com

Abstract: Generally there are many crops grown across the world, but wheat has specific identification among all. This is because wheat can be used to produce different variety of products using it and this is a naturally healthy product. Based on the wheat seed kernel size the wheat seeds are classified in to three classes like Kama, Rosa, and Canadian. Among them Rosa is of largest size and Canadian is smallest where Kama is medium size wheat. Our application will take the variable input and provide the type of wheat seed based on the dataset analysis. In this analysis we made an effort to present a predictive model to predict seed classes using machine learning algorithms which results in high crop production. So our analysis proposes the detection of wheat seed type using different machine learning techniques.

KEYWORDS: Wheat seed, Kernel size, Machine learning

Introduction

Wheat is most widely grown crop in the world and it is mostly used product across various counties. It provides 20% of the protein and food calories for the 4.5 billion people daily. Based on the Agricultural research the wheat is defined as second most important food crop after rice. Our analysis on wheat has been defined from total of 210 wheat seeds and classified in to three classes.

The input variables are Area, Perimeter, Compactness, Length, Width, Asymmetric coefficient, Kernel groove and the output variable is Target. The input variables can have different values based on those the output value is produced.

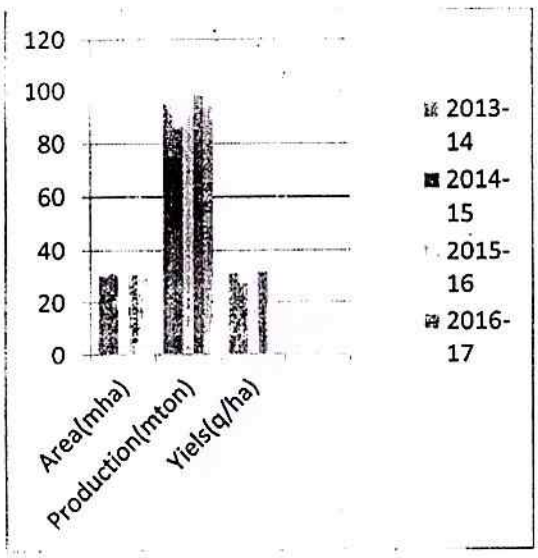

Figure 1: Wheat Production rate

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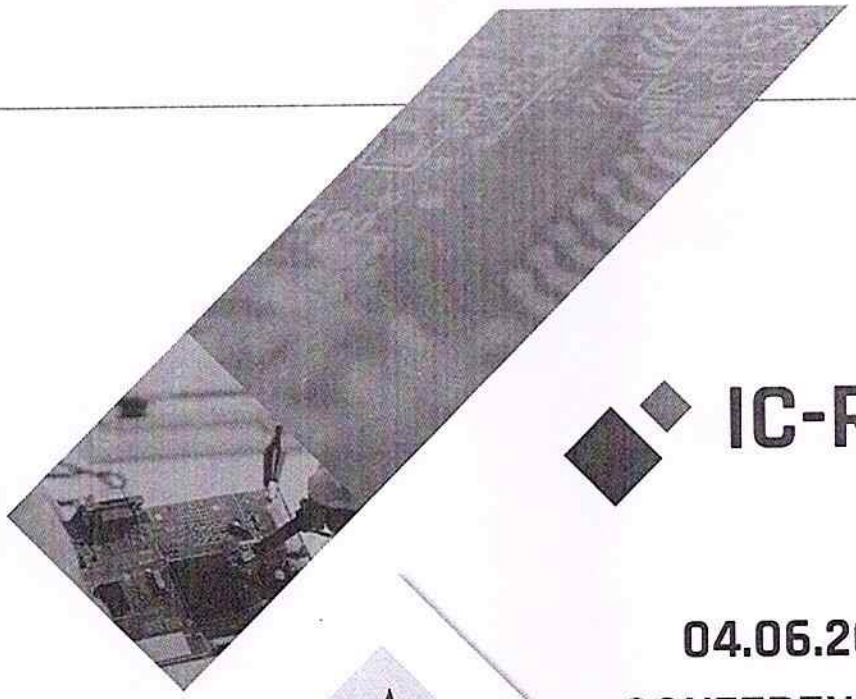

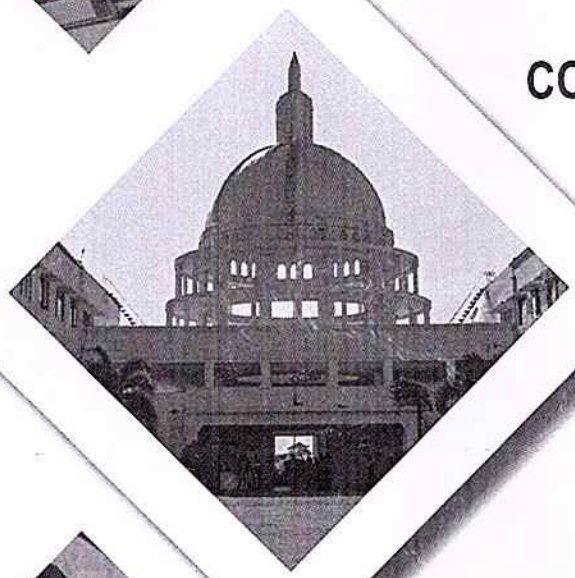

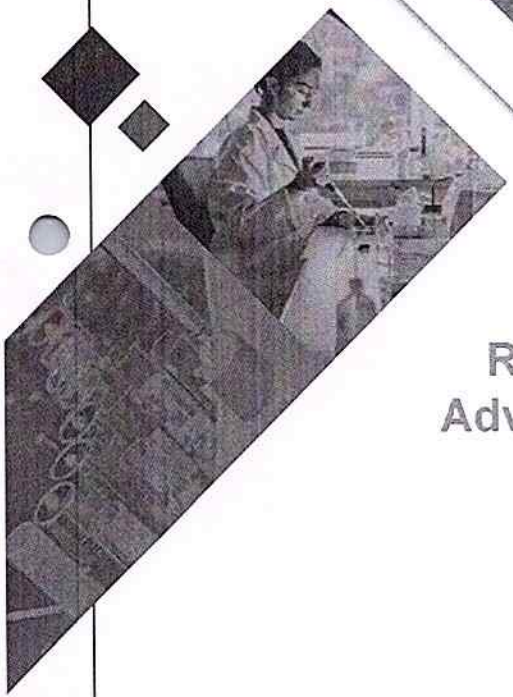

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SL.NO	PAPER TITLE	PAPER ID	PAGE NO
1	MULTI-BIT ERROR DETECTION AND CORRECTION USING THREE DIMENSIONAL PARITY FOR TCAM BASED FPGA	IC-EB-456001	1
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3	FAKE NEWS DETECTION	IC-EB-456003	15
4	SMART SHOPPING CART SYSTEM USING RFID	IC-EB-456004	20
5	MULTI CLASS TEXT CLASSIFICATION FOR TELUGU NEWS ARTICLES USING TRIGRAM	IC-EB-456005	27
6	POWER AND PERFORMANCE OPTIMIZATION IN 16-BIT ALU USING POWER GATING TECHNIQUE	IC-EB-456006	32
7	IMPLEMENTATION OF OFDM SYSTEM AND ANALYSIS OF BER USING LABVIEW	IC-EB-456007	39
8	FEATURE RELEVANT VISUAL EXPLANATION FOR DIAGNOSIS OF COVID-19 INFECTION FROM CT SCAN IMAGES USING ITERATIVE CONVOLUTION NEURAL NETWORK MODEL	IC-EB-456008	45
9	SELF-LEARNING BRAILLE APPLICATION FOR VISUALLY IMPAIRED PEOPLE	IC-EB-456009	55
10	DETECTION OF DENTAL PANTAMOGRAMS JAWBONE CYSTS AND TUMOR BY USING IMAGE ENHANCEMENT TECHNIQUES	IC-EB-456010	61
11	LEAF DISEASE DETECTION AND ITS REMEDY USING CONVOLUTIONAL NEURAL NETWORK	IC-EB-456011	68
12	DIRECTION OF ARRIVAL ESTIMATION FOR UNIFORM LINEAR ANTENNA ARRAY USING MUSIC ALGORITHM	IC-EB-456012	73
13	DEEP LEARNING BASED HUMAN TO HUMAN INTERACTION DETECTION USING WI-FI SIGNALS	IC-EB-456013	80
14	ENERGY EFFICIENCY IMPROVING IN SENSOR NODE OF INTERNET OF THINGS USING MODIFIED LEACH PROTOCOL	IC-EB-456014	86
15	FOURIER MODIFIED DIRECT FINITE MELLIN TRANSFORM BASED TEMPLATE MATCHING APPROACH FOR PRINTED ODIYA NUMERAL RECOGNITION	IC-EB-456015	92
16	ULTRA LOW SOLAR POWER HARVESTER WITH MPPT FOR IOT SMART NODES	IC-EB-456016	97
17	BILLS AUTOMATION USING ROBOTICS PROCESSAUTOMATION	IC-EB-456017	104
18	EMAIL AUTOMATION USING ROBOTIC PROCESS AUTOMATION	IC-EB-456018	106
19	A BRIEF VIEW ON TELEMEDICINE IN TODAY'S COVID 19 SCENARIO - CHALLENGES AND OPPORTUNITIES IN INDIA	IC-EB-456019	109
20	A CRYPTOGRAPHIC SHARDING ACHIEVE STRIDE SCALING ABILITY	IC-EB-456020	117
21	3D REPRESENTATION OF HUMAN WORKOUTS WITH TEMPORAL ACTIVITY RECOGNITION	IC-EB-456021	126

IOAC

SL.NO	PAPER TITLE	PAPER ID	PAGE NO
22	ADVANCED ALTERING MODEL OF HEALTHCARE SYSTEM FOR IDENTIFYING PRE-CARDIAC EFFECT USING IOT	IC-EB-456022	134
23	AN EFFICIENT LIVER DISEASE PREDICTION MODEL USING MACHINE LEARNING ALGORITHMS	IC-EB-456023	139
24	BIGMART SALES PREDICTION USING ML	IC-EB-456024	148
25	BREAST CANCER DETECTION USING MACHINE LEARNING	IC-EB-456025	153
26	VISIBLE LIGHT COMMUNICATION FOR IMAGE TRANSMISSIONS	IC-EB-456026	164
27	CREDIT CARD FRAUD DETECTION - MACHINE LEARNING METHODS	IC-EB-456027	175
28	DESIGN AND IMPLEMENTATION OF PATIENT MONITORING ROBOT IN HOSPITALS	IC-EB-456028	190
29	DETECTION OF WHEAT SEED TYPE USING ML	IC-EB-456029	197
30	HEART ATTACK PREDICTION USING MACHINE LEARNING TECHNIQUES	IC-EB-456030	203
31	NANOTECHNOLOGY BASED EXTRACTION OF ZINC OXIDE USING AZDHIRATCHA INDICA	IC-EB-456031	211
32	MOBILE PRICE CLASSIFICATION	IC-EB-456032	216
33	IOT BASED NEONATAL HEALTHCARE DIAGNOSIS SYSTEM	IC-EB-456033	225
34	PREDICTION OF GLASS USAGE BY APPLYING MACHINE LEARNING	IC-EB-456034	232
35	PREDICTIVE ANALYSIS OF LIVER DISEASES	IC-EB-456035	240
36	THYROID DISEASE PREDICTION USING MACHINE LEARNING TECHNIQUES	IC-EB-456036	250
37	HAPTICS AND PATTERN CONTROLLED ROBOT	IC-EB-456037	258
38	SMART STREET LIGHT USING IOT	IC-EB-456038	266
39	ENACTMENT ON UPLINK AND DOWNLINK: MIMO - NOMA FOR 5G	IC-EB-456039	272
40	AIRLINE RESERVATION SYSTEM USING C PROGRAMMING	IC-EB-456040	282
41	ADVANCED ARTIFICIAL INTELLIGENCE APPLICATION FOR SMART CLASS DIGITAL TEACHING METHODOLOGY	IC-EB-456041	286
42	STRESS MONITORING SYSTEM USING EEG SENSORS	IC-EB-456042	293
43	SECURE CONSERVING MULTIPLE KEYWORD RANKED SEARCH OVER ENCRYPTED CLOUD DATA	IC-EB-456043	303
44	LIBRARY MANAGEMENT SYSTEM IN C PROGRAMMING	IC-EB-456044	309

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SL.NO	PAPER TITLE	PAPER ID	PAGE NO
45	AUTOMATED CRIMINAL IDENTIFICATION BY FACE RECOGNITION USING OPEN CV CLASSIFIER	IC-EB-456045	314
46	DYNAMIC HAND GESTURE USING MACHINE LEARNING TECHNIQUE	IC-EB-456046	321
47	WORKSALE-DESIGN AND DEVELOPMENT OF SAAS BASED SALES MANAGEMENT SYSTEM	IC-EB-456047	326
48	A NOVEL APPROACH FOR CONTACTLESS SCREENING OF COVID	IC-EB-456048	332
49	CLOUD BASED HIGHWAYS SAFETY SYSTEM THROUGH REAL TIME MONITORING OF DRIVER SLEEPINESS CONDITION	IC-EB-456049	337
50	SAFETY MONITORING SYSTEMS FOR COAL MINE USING WIRELESS NETWORKS	IC-EB-456050	343
51	ARTIFICIAL INTELLIGENCE-BASED SMART MIRROR (A.I.S.M)	IC-EB-456051	350
52	VEHICLE BLACK BOX SYSTEM USING RASPBERRY PI	IC-EB-456052	355
53	DESIGN AND IMPLEMENTATION OF 4-2 COMPRESSOR FOR MULTIPLIER APPLICATIONS	IC-EB-456053	360
54	INTELLIGENT CONTROL OF GRID CONNECTED HYBRID ENERGY SYSTEM WITH IMPROVED SEPIC CONVERTER	IC-EB-456054	369
55	BIDIRECTIONAL SEPIC-ZETA CONVERTER FOR BATTERY BASED GRID-TIED PV SYSTEM	IC-EB-456055	379
56	RECENT ADVANCEMENTS IN BIOMEDICAL ENGINEERING	IC-EB-456056	389
57	AIRIAL ROPE TRANSIT ROBOT FOR SURVEILLANCE CAPABILITY	IC-EB-456057	395
58	SEGMENTATION OF LUNG LESION FROM CT IMAGE	IC-EB-456058	400
59	IOT BASED TAMPERED ENERGY METER MONITORING.	IC-EB-456059	405
60	MACHINE LEARNING TECHNOLOGY USED FOR TOXIC LIQIUD DETECTION RESPONSE AND RECOVERY TIME ANALYSIS	IC-EB-456060	410
61	DESIGN OF MICRO STRIP ANTENNA FOR THE USE OF MOBILE APPLICATIONS	IC-EB-456061	415
62	MOTION OF CHARGED PARTICLES ELECTROMAGNETIC FIELD	IC-EB-456062	422
63	COMMUNICATION FOR DEAF AND DUMB USING GESTURE BASED CONTROL.	IC-EB-456063	429
64	DETECTION AND CLASSIFICATION OF SKIN DISEASE WITH THE HELP OF PI KIT	IC-EB-456064	436
65	SELF-LEARNING BRAILLE APPLICATION FOR VISUALLY IMPAIRED PEOPLE	IC-EB-456065	439
66	FEATURE RELEVANT VISUAL EXPLANATION FOR DIAGNOSIS OF COVID-19 INFECTION FROM CT SCAN IMAGES USING ITERATIVE CONVOLUTION NEURAL NETWORK MODEL	IC-EB-456066	445
67	STUDY ON DATA ANALYSIS OF POSTAL SECTION ROUTINE AND ITS IMPROVEMENT USING MACHINE LEARNING	IC-EB-456067	453

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NARASARAOPETA ENGINEERING COLLEGE (AUTONOMOUS) NARASARAOPET - 522 601. Guntur (Dist.), A.P.

SL.NO	PAPER TITLE	PAPER ID	PAGE NO
68	OVARIAN CANCER- SIGN,SYMPTOMS,STAGES AND TREATMENT	IC-EB-456068	461
69	SMART AGRICULTURE FIELD IRRIGATION SYSTEM USING SENSORS & GSM	IC-EB-456069	466
70	A STUDY ON DATA MINING APPLICATIONS IN HEALTHCARE SECTOR	IC-EB-456070	471
71	BATTERY CHARGE CONTROLLER USING LUO CONVERTER FOR THREE PHASE GRID TIED ELECTRIC VEHICLE SYSTEM	IC-EB-456071	475
72	CASCADED FUZZY LOGIC CONTROL OF PHOTOVOLTAIC FED DYNAMIC VOLTAGE RESTORER FOR POWER DISTRIBUTION SYSTEMS	IC-EB-456072	486
73	SOLAR INTEGRATED ZETA CONVERTER FOR DFIG BASED WIND ENERGY CONVERSION SYSTEM APPLICATIONS	IC-EB-456073	494
74	A SWITCHED BOOST LANDSMAN CONVERTER WITH ANFIS BASED MPPT FOR GRID CONNECTED PV SYSTEM	IC-EB-456074	505
75	SMART BIN	IC-EB-456075	515
76	AUTOMATIC ROOM LIGHT SYSTEM	IC-EB-456076	518
77	COMPARISON BETWEEN RECTANGULAR MICROSTRIP PATCH ANTENNA WITH AND WITHOUT DEFECTED GROUND STRUCTURE AT 1.85 GHZ	IC-EB-456077	522
78	WATER LEVEL INDICATOR	IC-EB-456078	527
79	INDUSTRY TEMPERATURE CONTROL SYSTEM	IC-EB-456079	530
80	SMART STREET LIGHT CONTROL SYSTEM	IC-EB-456080	533
81	PULSE RATE MEASUREMENT USING ARDUINO	IC-EB-456081	536
82	TANK WATER LEVEL INDICATOR	IC-EB-456082	540
83	REAL TIME DC MOTOR SPEED AND DIRECTION CONTROL	IC-EB-456083	543
84	SMART TRACKING SECURITY DEVICE FOR WOMEN SAFETY USING RASPBERRY PIE HARDWARE	IC-EB-456084	547
85	A COMPREHENSIVE STUDY ON RESPIRATORY PARAMETERS USING BLUETOOTH ENABLED MULTILAYERED COVID MASK_A PREVENTIVE MEASURE	IC-EB-456085	553
86	EVALUATION AND MODELING OF 3D RECONSTRUCTION OF NASAL BONE FRACTURE USING PHOTOGRAMMETRY METHOD TO TREAT FACIAL FRACTURES	IC-EB-456086	559
87	DESIGN AND DEVELOPMENT OF AN EFFECTIVE SMART GARBAGE SYSTEM USING THE INTERNET OF THINGS	IC-EB-456087	563

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Heart Attack Prediction using Machine Learning Techniques

Dr S V N Sreenivasu[1a)], Tammana Bhargavika[2b)], B Tulasibai[3c)], P SriLakshmi[4d)]

[1]*Professor,NarasaraopetaEngineeringCollege,Narasaraopet,India*

[2,3,4]*B.Tech Student, Department of Computer Science and Engineering,Narasaraopeta EngineeringCollege,Narasaraopet,GunturDist,A.P*

[a)]drsvnsrinivasu@gmail.com.
[b)]hargavikatammana@gmail.com
[c)]tulasib2017@gmail.com
[d)]peramsrilakshmi12@gmail.com

Abstract. Thediagnosisofheartdiseaseinmostcasesdependsonacomplexcombinationofclinicalandpathologicaldata.Becauseof this complexity, there exists a significant amount of interest among clinical professionals and researchers regarding the efficientandaccuratepredictionofheartdisease.Inthispaper,wedevelopaheartdiseasepredictsystemthatcanassistmedicalprofessionalsin predicting heart disease status based on the clinical data of patients. Our approaches include three steps. Firstly, we select 13 important clinical features, i.e.,age, sex, chestp a in type, trestbps, cholesterol, fasting bloodsugar, restingecg, max heart rate, exercise induced angina, old peak, slope, number of ves selscolored, and thal.Secondly, we develop an artificial neural network algorithm for classifying heart disease based on these clinical features. The accuracy of prediction is near 100. Our approaches are effective in predicting the heart disease of a patient.

INTRODUCTION

Heart is the most essential or crucial portion of our body. Heart is used to maintain and conjugate blood inour body. There are a lot of cases in the world related to heart diseases. People are leading to death due to heartdisease.Varioussymptomslikechestpain,fastingofheartbeatandsoonarementioned.Thehealthcareindustriesfound a large amount of data. Heart disease has a great deal of attention in medical research. The diagnosis ofheart disease is a challenging task, which can offer automated prediction about the heart condition of patient sothat further treatment can be made effective. It The primary outcome was a composite of the predictive ability ofMLalgorithmsofcoronaryarterydisease, heart failure, stroke, and cardiac arrhythmias. Of 344total studies identified, 103 cohorts, with a total of 3,377,318 individuals, met our inclusion criteria. For thepredictionofcoronaryarterydisease,boostingalgorithmshadapooledareaunderthecurve(AUC)of0.88(95%CI0.84–0.91),andcustom-builtalgorithmshadapooledAUCof0.93(95%CI0.85–0.97).

This paper gives the idea of predicting heart disease using machine learning algorithms. Here, we will usevarious machine learning algorithms such as Support Vector Machine, Random Forest, KNN, Naïve Bayes,Decision Tree and Logistic Regression. The algorithms are used on the basis of features and for predicting theheartdisease.Thispaperusesdifferentmachinelearningalgorithmsforcomparingtheaccuracyamongthem.

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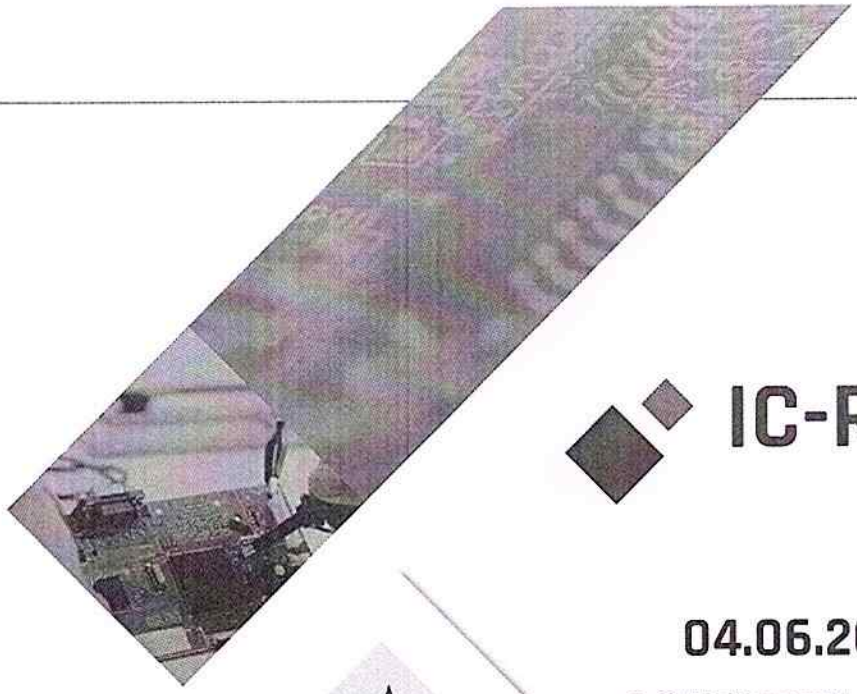

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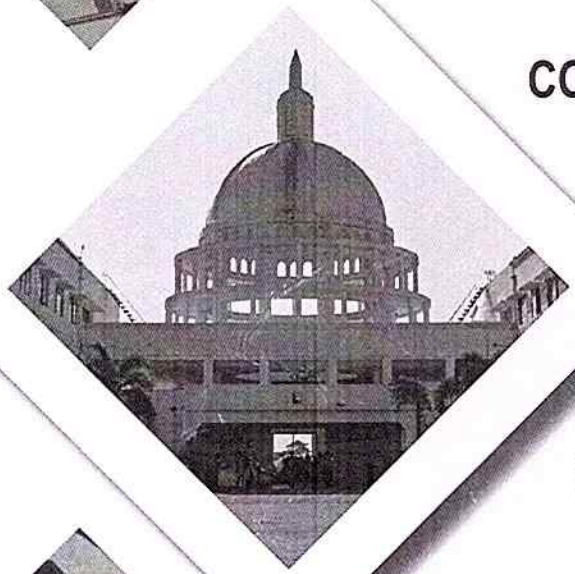

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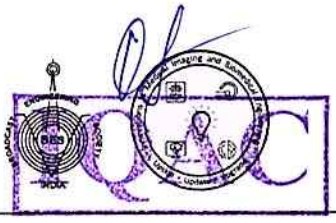

Table of Content

SL.NO	PAPER TITLE	PAPER ID	PAGE NO
1	MULTI-BIT ERROR DETECTION AND CORRECTION USING THREE DIMENSIONAL PARITY FOR TCAM BASED FPGA	IC-EB-456001	1
2	INTERNET OF THINGS BASED EARLIER RECOGNITION AND INTIMATION OF WILD ANIMALS ATTACK ON FORMING LANDS	IC-EB-456002	5
3	FAKE NEWS DETECTION	IC-EB-456003	15
4	SMART SHOPPING CART SYSTEM USING RFID	IC-EB-456004	20
5	MULTI CLASS TEXT CLASSIFICATION FOR TELUGU NEWS ARTICLES USING TRIGRAM	IC-EB-456005	27
6	POWER AND PERFORMANCE OPTIMIZATION IN 16-BIT ALU USING POWER GATING TECHNIQUE	IC-EB-456006	32
7	IMPLEMENTATION OF OFDM SYSTEM AND ANALYSIS OF BER USING LABVIEW	IC-EB-456007	39
8	FEATURE RELEVANT VISUAL EXPLANATION FOR DIAGNOSIS OF COVID-19 INFECTION FROM CT SCAN IMAGES USING ITERATIVE CONVOLUTION NEURAL NETWORK MODEL	IC-EB-456008	45
9	SELF-LEARNING BRAILLE APPLICATION FOR VISUALLY IMPAIRED PEOPLE	IC-EB-456009	55
10	DETECTION OF DENTAL PANTAMOGRAMS JAWBONE CYSTS AND TUMOR BY USING IMAGE ENHANCEMENT TECHNIQUES	IC-EB-456010	61
11	LEAF DISEASE DETECTION AND ITS REMEDY USING CONVOLUTIONAL NEURAL NETWORK	IC-EB-456011	68
12	DIRECTION OF ARRIVAL ESTIMATION FOR UNIFORM LINEAR ANTENNA ARRAY USING MUSIC ALGORITHM	IC-EB-456012	73
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16	ULTRA LOW SOLAR POWER HARVESTER WITH MPPT FOR IOT SMART NODES	IC-EB-456016	97
17	BILLS AUTOMATION USING ROBOTICS PROCESSAUTOMATION	IC-EB-456017	104
18	EMAIL AUTOMATION USING ROBOTIC PROCESS AUTOMATION	IC-EB-456018	106
19	A BRIEF VIEW ON TELEMEDICINE IN TODAY'S COVID 19 SCENARIO - CHALLENGES AND OPPORTUNITIES IN INDIA	IC-EB-456019	109
20	A CRYPTOGRAPHIC SHARDING ACHIEVE STRIDE SCALING ABILITY	IC-EB-456020	117
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22	ADVANCED ALTERING MODEL OF HEALTHCARE SYSTEM FOR IDENTIFYING PRE-CARDIAC EFFECT USING IOT	IC-EB-456022	134
23	AN EFFICIENT LIVER DISEASE PREDICTION MODEL USING MACHINE LEARNING ALGORITHMS	IC-EB-456023	139
24	BIGMART SALES PREDICTION USING ML	IC-EB-456024	148
25	BREAST CANCER DETECTION USING MACHINE LEARNING	IC-EB-456025	153
26	VISIBLE LIGHT COMMUNICATION FOR IMAGE TRANSMISSIONS	IC-EB-456026	164
27	CREDIT CARD FRAUD DETECTION - MACHINE LEARNING METHODS	IC-EB-456027	175
28	DESIGN AND IMPLEMENTATION OF PATIENT MONITORING ROBOT IN HOSPITALS	IC-EB-456028	190
29	DETECTION OF WHEAT SEED TYPE USING ML	IC-EB-456029	197
30	HEART ATTACK PREDICTION USING MACHINE LEARNING TECHNIQUES	IC-EB-456030	203
31	NANOTECHNOLOGY BASED EXTRACTION OF ZINC OXIDE USING AZDHIRATCHA INDICA	IC-EB-456031	211
32	MOBILE PRICE CLASSIFICATION	IC-EB-456032	216
33	IOT BASED NEONATAL HEALTHCARE DIAGNOSIS SYSTEM	IC-EB-456033	225
34	PREDICTION OF GLASS USAGE BY APPLYING MACHINE LEARNING	IC-EB-456034	232
35	PREDICTIVE ANALYSIS OF LIVER DISEASES	IC-EB-456035	240
36	THYROID DISEASE PREDICTION USING MACHINE LEARNING TECHNIQUES	IC-EB-456036	250
37	HAPTICS AND PATTERN CONTROLLED ROBOT	IC-EB-456037	258
38	SMART STREET LIGHT USING IOT	IC-EB-456038	266
39	ENACTMENT ON UPLINK AND DOWNLINK: MIMO - NOMA FOR 5G	IC-EB-456039	272
40	AIRLINE RESERVATION SYSTEM USING C PROGRAMMING	IC-EB-456040	282
41	ADVANCED ARTIFICIAL INTELLIGENCE APPLICATION FOR SMART CLASS DIGITAL TEACHING METHODOLOGY	IC-EB-456041	286
42	STRESS MONITORING SYSTEM USING EEG SENSORS	IC-EB-456042	293
43	SECURE CONSERVING MULTIPLE KEYWORD RANKED SEARCH OVER ENCRYPTED CLOUD DATA	IC-EB-456043	303
44	LIBRARY MANAGEMENT SYSTEM IN C PROGRAMMING	IC-EB-456044	309

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45	AUTOMATED CRIMINAL IDENTIFICATION BY FACE RECOGNITION USING OPEN CV CLASSIFIER	IC-EB-456045	314
46	DYNAMIC HAND GESTURE USING MACHINE LEARNING TECHNIQUE	IC-EB-456046	321
47	WORKSALE-DESIGN AND DEVELOPMENT OF SAAS BASED SALES MANAGEMENT SYSTEM	IC-EB-456047	326
48	A NOVEL APPROACH FOR CONTACTLESS SCREENING OF COVID	IC-EB-456048	332
49	CLOUD BASED HIGHWAYS SAFETY SYSTEM THROUGH REAL TIME MONITORING OF DRIVER SLEEPINESS CONDITION	IC-EB-456049	337
50	SAFETY MONITORING SYSTEMS FOR COAL MINE USING WIRELESS NETWORKS	IC-EB-456050	343
51	ARTIFICIAL INTELLIGENCE-BASED SMART MIRROR (A.I.S.M)	IC-EB-456051	350
52	VEHICLE BLACK BOX SYSTEM USING RASPBERRY PI	IC-EB-456052	355
53	DESIGN AND IMPLEMENTATION OF 4-2 COMPRESSOR FOR MULTIPLIER APPLICATIONS	IC-EB-456053	360
54	INTELLIGENT CONTROL OF GRID CONNECTED HYBRID ENERGY SYSTEM WITH IMPROVED SEPIC CONVERTER	IC-EB-456054	369
55	BIDIRECTIONAL SEPIC-ZETA CONVERTER FOR BATTERY BASED GRID-TIED PV SYSTEM	IC-EB-456055	379
56	RECENT ADVANCEMENTS IN BIOMEDICAL ENGINEERING	IC-EB-456056	389
57	AIRIAL ROPE TRANSIT ROBOT FOR SURVEILLANCE CAPABILITY	IC-EB-456057	395
58	SEGMENTATION OF LUNG LESION FROM CT IMAGE	IC-EB-456058	400
59	IOT BASED TAMPERED ENERGY METER MONITORING.	IC-EB-456059	405
60	MACHINE LEARNING TECHNOLOGY USED FOR TOXIC LIQIUD DETECTION RESPONSE AND RECOVERY TIME ANALYSIS	IC-EB-456060	410
61	DESIGN OF MICRO STRIP ANTENNA FOR THE USE OF MOBILE APPLICATIONS	IC-EB-456061	415
62	MOTION OF CHARGED PARTICLES ELECTROMAGNETIC FIELD	IC-EB-456062	422
63	COMMUNICATION FOR DEAF AND DUMB USING GESTURE BASED CONTROL.	IC-EB-456063	429
64	DETECTION AND CLASSIFICATION OF SKIN DISEASE WITH THE HELP OF PI KIT	IC-EB-456064	436
65	SELF-LEARNING BRAILLE APPLICATION FOR VISUALLY IMPAIRED PEOPLE	IC-EB-456065	439
66	FEATURE RELEVANT VISUAL EXPLANATION FOR DIAGNOSIS OF COVID-19 INFECTION FROM CT SCAN IMAGES USING ITERATIVE CONVOLUTION NEURAL NETWORK MODEL	IC-EB-456066	445
67	STUDY ON DATA ANALYSIS OF POSTAL SECTION ROUTINE AND ITS IMPROVEMENT USING MACHINE LEARNING	IC-EB-456067	453

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SL.NO	PAPER TITLE	PAPER ID	PAGE NO
68	OVARIAN CANCER- SIGN,SYMPTOMS,STAGES AND TREATMENT	IC-EB-456068	461
69	SMART AGRICULTURE FIELD IRRIGATION SYSTEM USING SENSORS & GSM	IC-EB-456069	466
70	A STUDY ON DATA MINING APPLICATIONS IN HEALTHCARE SECTOR	IC-EB-456070	471
71	BATTERY CHARGE CONTROLLER USING LUO CONVERTER FOR THREE PHASE GRID TIED ELECTRIC VEHICLE SYSTEM	IC-EB-456071	475
72	CASCADED FUZZY LOGIC CONTROL OF PHOTOVOLTAIC FED DYNAMIC VOLTAGE RESTORER FOR POWER DISTRIBUTION SYSTEMS	IC-EB-456072	486
73	SOLAR INTEGRATED ZETA CONVERTER FOR DFIG BASED WIND ENERGY CONVERSION SYSTEM APPLICATIONS	IC-EB-456073	494
74	A SWITCHED BOOST LANDSMAN CONVERTER WITH ANFIS BASED MPPT FOR GRID CONNECTED PV SYSTEM	IC-EB-456074	505
75	SMART BIN	IC-EB-456075	515
76	AUTOMATIC ROOM LIGHT SYSTEM	IC-EB-456076	518
77	COMPARISON BETWEEN RECTANGULAR MICROSTRIP PATCH ANTENNA WITH AND WITHOUT DEFECTED GROUND STRUCTURE AT 1.85 GHZ	IC-EB-456077	522
78	WATER LEVEL INDICATOR	IC-EB-456078	527
79	INDUSTRY TEMPERATURE CONTROL SYSTEM	IC-EB-456079	530
80	SMART STREET LIGHT CONTROL SYSTEM	IC-EB-456080	533
81	PULSE RATE MEASUREMENT USING ARDUINO	IC-EB-456081	536
82	TANK WATER LEVEL INDICATOR	IC-EB-456082	540
83	REAL TIME DC MOTOR SPEED AND DIRECTION CONTROL	IC-EB-456083	543
84	SMART TRACKING SECURITY DEVICE FOR WOMEN SAFETY USING RASPBERRY PIE HARDWARE	IC-EB-456084	547
85	A COMPREHENSIVE STUDY ON RESPIRATORY PARAMETERS USING BLUETOOTH ENABLED MULTILAYERED COVID MASK_A PREVENTIVE MEASURE	IC-EB-456085	553
86	EVALUATION AND MODELING OF 3D RECONSTRUCTION OF NASAL BONE FRACTURE USING PHOTOGRAMMETRY METHOD TO TREAT FACIAL FRACTURES	IC-EB-456086	559
87	DESIGN AND DEVELOPMENT OF AN EFFECTIVE SMART GARBAGE SYSTEM USING THE INTERNET OF THINGS	IC-EB-456087	563

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Prediction of Glass Usage by Applying Machine Learning

Dr S V N Sreenivasu[1a], Madisetty Prathyusha[2b]

[1]Professor, DepartmentofCSE, NarasaraopetaEngineeringCollege, Narasaraopet, GunturDist, A.P.

[2]B.Tech Student, Departmebtof CSE, NarasaraopetaEngineering College, Narasaraopet, GunturDist, A.P.

[a]drsvnsrinivasu@gmail.com

[b]mgprathyusha@gmail.com

ABSTRACT :Glass classification specifies the type of glass according to the properties of the glass called refractive index and it types like Sodium, Magnesium and Aluminum. The glass type is the result of the Application and that result is help ful to identify the purpose of the glass which means it gives whether the glass is used for building windows, containers, tableware, headlamps and vehicle windows.

INTRODUCTION

Machine learning is one of the applications of artificial intelligence (AI) that provides computers, the abilityto learn automatically and improve from experience instead of explicitly programmed. It focuses on developingcomputerprogramsthatcanaccessdataanduseittolearnfromthemselves.Themainaimofourpaperistospecifi esthe type of glass according to the properties of the glass called refractive index and it types like Sodium, Magnesium and Aluminum. The glass type is the result of the Application and that result is helpful to identify the purpose of the glass which means it gives whether the glass is used for building windows, containers, tableware, headlamps and vehicle windows. In this we use different algorithms which gives different accuracies. Among them we have to takethehighestaccuracy(GradientBoostingClassifier)andgiveitasinput.

LITERATURESURVEY

Machine learning is one of the applications of artificial intelligence (AI) that provides computers,
theabilitytolearnautomaticallyandimprovefromexperienceinsteadofexplicitlyprogrammed.Itfoc usesondevelopingcomputer programs. The main aim is to allow computers to learn automatically without human intervention and also adjust actions accordingly. The analytical data (five elemental concentrations plus refractive index) for 349 glass samples have been assessed for the purpose of classifying of glass. The requirements of a classification scheme for glass is Mg, Na, Fe, Mg, Al, Si, K, Ba and refractive index. To classify the type of glass we used Gradient Boosting Classifier.

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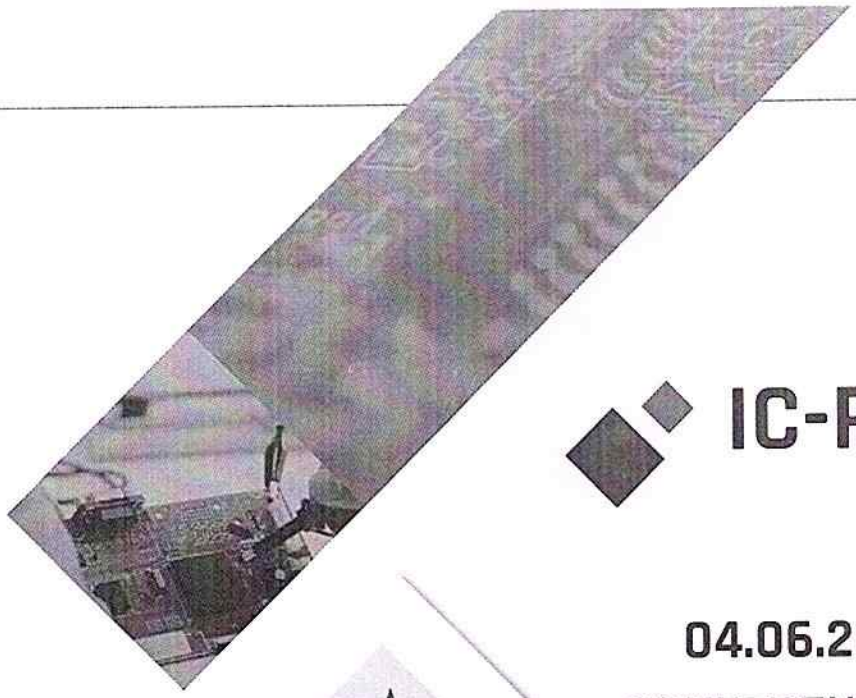

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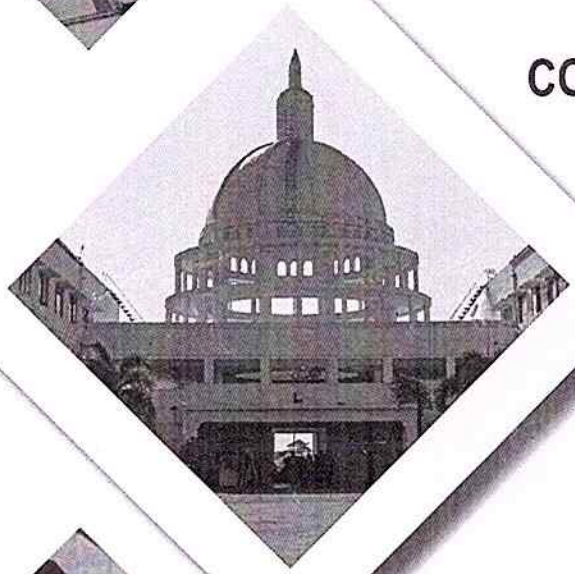

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Table of Content

SL.NO	PAPER TITLE	PAPER ID	PAGE NO
1	MULTI-BIT ERROR DETECTION AND CORRECTION USING THREE DIMENSIONAL PARITY FOR TCAM BASED FPGA	IC-EB-456001	1
2	INTERNET OF THINGS BASED EARLIER RECOGNITION AND INTIMATION OF WILD ANIMALS ATTACK ON FORMING LANDS	IC-EB-456002	5
3	FAKE NEWS DETECTION	IC-EB-456003	15
4	SMART SHOPPING CART SYSTEM USING RFID	IC-EB-456004	20
5	MULTI CLASS TEXT CLASSIFICATION FOR TELUGU NEWS ARTICLES USING TRIGRAM	IC-EB-456005	27
6	POWER AND PERFORMANCE OPTIMIZATION IN 16-BIT ALU USING POWER GATING TECHNIQUE	IC-EB-456006	32
7	IMPLEMENTATION OF OFDM SYSTEM AND ANALYSIS OF BER USING LABVIEW	IC-EB-456007	39
8	FEATURE RELEVANT VISUAL EXPLANATION FOR DIAGNOSIS OF COVID-19 INFECTION FROM CT SCAN IMAGES USING ITERATIVE CONVOLUTION NEURAL NETWORK MODEL	IC-EB-456008	45
9	SELF-LEARNING BRAILLE APPLICATION FOR VISUALLY IMPAIRED PEOPLE	IC-EB-456009	55
10	DETECTION OF DENTAL PANTAMOGRAMS JAWBONE CYSTS AND TUMOR BY USING IMAGE ENHANCEMENT TECHNIQUES	IC-EB-456010	61
11	LEAF DISEASE DETECTION AND ITS REMEDY USING CONVOLUTIONAL NEURAL NETWORK	IC-EB-456011	68
12	DIRECTION OF ARRIVAL ESTIMATION FOR UNIFORM LINEAR ANTENNA ARRAY USING MUSIC ALGORITHM	IC-EB-456012	73
13	DEEP LEARNING BASED HUMAN TO HUMAN INTERACTION DETECTION USING WI-FI SIGNALS	IC-EB-456013	80
14	ENERGY EFFICIENCY IMPROVING IN SENSOR NODE OF INTERNET OF THINGS USING MODIFIED LEACH PROTOCOL	IC-EB-456014	86
15	FOURIER MODIFIED DIRECT FINITE MELLIN TRANSFORM BASED TEMPLATE MATCHING APPROACH FOR PRINTED ODIYA NUMERAL RECOGNITION	IC-EB-456015	92
16	ULTRA LOW SOLAR POWER HARVESTER WITH MPPT FOR IOT SMART NODES	IC-EB-456016	97
17	BILLS AUTOMATION USING ROBOTICS PROCESSAUTOMATION	IC-EB-456017	104
18	EMAIL AUTOMATION USING ROBOTIC PROCESS AUTOMATION	IC-EB-456018	106
19	A BRIEF VIEW ON TELEMEDICINE IN TODAY'S COVID 19 SCENARIO - CHALLENGES AND OPPORTUNITIES IN INDIA	IC-EB-456019	109
20	A CRYPTOGRAPHIC SHARDING ACHIEVE STRIDE SCALING ABILITY	IC-EB-456020	117
21	3D REPRESENTATION OF HUMAN WORKOUTS WITH TEMPORAL ACTIVITY RECOGNITION	IC-EB-456021	126

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SL.NO	PAPER TITLE	PAPER ID	PAGE NO
22	ADVANCED ALTERING MODEL OF HEALTHCARE SYSTEM FOR IDENTIFYING PRE-CARDIAC EFFECT USING IOT	IC-EB-456022	134
23	AN EFFICIENT LIVER DISEASE PREDICTION MODEL USING MACHINE LEARNING ALGORITHMS	IC-EB-456023	139
24	BIGMART SALES PREDICTION USING ML	IC-EB-456024	148
25	BREAST CANCER DETECTION USING MACHINE LEARNING	IC-EB-456025	153
26	VISIBLE LIGHT COMMUNICATION FOR IMAGE TRANSMISSIONS	IC-EB-456026	164
27	CREDIT CARD FRAUD DETECTION - MACHINE LEARNING METHODS	IC-EB-456027	175
28	DESIGN AND IMPLEMENTATION OF PATIENT MONITORING ROBOT IN HOSPITALS	IC-EB-456028	190
29	DETECTION OF WHEAT SEED TYPE USING ML	IC-EB-456029	197
30	HEART ATTACK PREDICTION USING MACHINE LEARNING TECHNIQUES	IC-EB-456030	203
31	NANOTECHNOLOGY BASED EXTRACTION OF ZINC OXIDE USING AZDHIRATCHA INDICA	IC-EB-456031	211
32	MOBILE PRICE CLASSIFICATION	IC-EB-456032	216
33	IOT BASED NEONATAL HEALTHCARE DIAGNOSIS SYSTEM	IC-EB-456033	225
34	PREDICTION OF GLASS USAGE BY APPLYING MACHINE LEARNING	IC-EB-456034	232
35	PREDICTIVE ANALYSIS OF LIVER DISEASES	IC-EB-456035	240
36	THYROID DISEASE PREDICTION USING MACHINE LEARNING TECHNIQUES	IC-EB-456036	250
37	HAPTICS AND PATTERN CONTROLLED ROBOT	IC-EB-456037	258
38	SMART STREET LIGHT USING IOT	IC-EB-456038	266
39	ENACTMENT ON UPLINK AND DOWNLINK: MIMO - NOMA FOR 5G	IC-EB-456039	272
40	AIRLINE RESERVATION SYSTEM USING C PROGRAMMING	IC-EB-456040	282
41	ADVANCED ARTIFICIAL INTELLIGENCE APPLICATION FOR SMART CLASS DIGITAL TEACHING METHODOLOGY	IC-EB-456041	286
42	STRESS MONITORING SYSTEM USING EEG SENSORS	IC-EB-456042	293
43	SECURE CONSERVING MULTIPLE KEYWORD RANKED SEARCH OVER ENCRYPTED CLOUD DATA	IC-EB-456043	303
44	LIBRARY MANAGEMENT SYSTEM IN C PROGRAMMING	IC-EB-456044	309

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SL.NO	PAPER TITLE	PAPER ID	PAGE NO
45	AUTOMATED CRIMINAL IDENTIFICATION BY FACE RECOGNITION USING OPEN CV CLASSIFIER	IC-EB-456045	314
46	DYNAMIC HAND GESTURE USING MACHINE LEARNING TECHNIQUE	IC-EB-456046	321
47	WORKSALE-DESIGN AND DEVELOPMENT OF SAAS BASED SALES MANAGEMENT SYSTEM	IC-EB-456047	326
48	A NOVEL APPROACH FOR CONTACTLESS SCREENING OF COVID	IC-EB-456048	332
49	CLOUD BASED HIGHWAYS SAFETY SYSTEM THROUGH REAL TIME MONITORING OF DRIVER SLEEPINESS CONDITION	IC-EB-456049	337
50	SAFETY MONITORING SYSTEMS FOR COAL MINE USING WIRELESS NETWORKS	IC-EB-456050	343
51	ARTIFICIAL INTELLIGENCE-BASED SMART MIRROR (A.I.S.M)	IC-EB-456051	350
52	VEHICLE BLACK BOX SYSTEM USING RASPBERRY PI	IC-EB-456052	355
53	DESIGN AND IMPLEMENTATION OF 4-2 COMPRESSOR FOR MULTIPLIER APPLICATIONS	IC-EB-456053	360
54	INTELLIGENT CONTROL OF GRID CONNECTED HYBRID ENERGY SYSTEM WITH IMPROVED SEPIC CONVERTER	IC-EB-456054	369
55	BIDIRECTIONAL SEPIC-ZETA CONVERTER FOR BATTERY BASED GRID-TIED PV SYSTEM	IC-EB-456055	379
56	RECENT ADVANCEMENTS IN BIOMEDICAL ENGINEERING	IC-EB-456056	389
57	AIRIAL ROPE TRANSIT ROBOT FOR SURVEILLANCE CAPABILITY	IC-EB-456057	395
58	SEGMENTATION OF LUNG LESION FROM CT IMAGE	IC-EB-456058	400
59	IOT BASED TAMPERED ENERGY METER MONITORING.	IC-EB-456059	405
60	MACHINE LEARNING TECHNOLOGY USED FOR TOXIC LIQIUD DETECTION RESPONSE AND RECOVERY TIME ANALYSIS	IC-EB-456060	410
61	DESIGN OF MICRO STRIP ANTENNA FOR THE USE OF MOBILE APPLICATIONS	IC-EB-456061	415
62	MOTION OF CHARGED PARTICLES ELECTROMAGNETIC FIELD	IC-EB-456062	422
63	COMMUNICATION FOR DEAF AND DUMB USING GESTURE BASED CONTROL.	IC-EB-456063	429
64	DETECTION AND CLASSIFICATION OF SKIN DISEASE WITH THE HELP OF PI KIT	IC-EB-456064	436
65	SELF-LEARNING BRAILLE APPLICATION FOR VISUALLY IMPAIRED PEOPLE	IC-EB-456065	439
66	FEATURE RELEVANT VISUAL EXPLANATION FOR DIAGNOSIS OF COVID-19 INFECTION FROM CT SCAN IMAGES USING ITERATIVE CONVOLUTION NEURAL NETWORK MODEL	IC-EB-456066	445
67	STUDY ON DATA ANALYSIS OF POSTAL SECTION ROUTINE AND ITS IMPROVEMENT USING MACHINE LEARNING	IC-EB-456067	453

SL.NO	PAPER TITLE	PAPER ID	PAGE NO
68	OVARIAN CANCER- SIGN.SYMPTOMS.STAGES AND TREATMENT	IC-EB-456068	461
69	SMART AGRICULTURE FIELD IRRIGATION SYSTEM USING SENSORS & GSM	IC-EB-456069	466
70	A STUDY ON DATA MINING APPLICATIONS IN HEALTHCARE SECTOR	IC-EB-456070	471
71	BATTERY CHARGE CONTROLLER USING LUO CONVERTER FOR THREE PHASE GRID TIED ELECTRIC VEHICLE SYSTEM	IC-EB-456071	475
72	CASCADED FUZZY LOGIC CONTROL OF PHOTOVOLTAIC FED DYNAMIC VOLTAGE RESTORER FOR POWER DISTRIBUTION SYSTEMS	IC-EB-456072	486
73	SOLAR INTEGRATED ZETA CONVERTER FOR DFIG BASED WIND ENERGY CONVERSION SYSTEM APPLICATIONS	IC-EB-456073	494
74	A SWITCHED BOOST LANDSMAN CONVERTER WITH ANFIS BASED MPPT FOR GRID CONNECTED PV SYSTEM	IC-EB-456074	505
75	SMART BIN	IC-EB-456075	515
76	AUTOMATIC ROOM LIGHT SYSTEM	IC-EB-456076	518
77	COMPARISON BETWEEN RECTANGULAR MICROSTRIP PATCH ANTENNA WITH AND WITHOUT DEFECTED GROUND STRUCTURE AT 1.85 GHZ	IC-EB-456077	522
78	WATER LEVEL INDICATOR	IC-EB-456078	527
79	INDUSTRY TEMPERATURE CONTROL SYSTEM	IC-EB-456079	530
80	SMART STREET LIGHT CONTROL SYSTEM	IC-EB-456080	533
81	PULSE RATE MEASUREMENT USING ARDUINO	IC-EB-456081	536
82	TANK WATER LEVEL INDICATOR	IC-EB-456082	540
83	REAL TIME DC MOTOR SPEED AND DIRECTION CONTROL	IC-EB-456083	543
84	SMART TRACKING SECURITY DEVICE FOR WOMEN SAFETY USING RASPBERRY PIE HARDWARE	IC-EB-456084	547
85	A COMPREHENSIVE STUDY ON RESPIRATORY PARAMETERS USING BLUETOOTH ENABLED MULTILAYERED COVID MASK_A PREVENTIVE MEASURE	IC-EB-456085	553
86	EVALUATION AND MODELING OF 3D RECONSTRUCTION OF NASAL BONE FRACTURE USING PHOTOGRAMMETRY METHOD TO TREAT FACIAL FRACTURES	IC-EB-456086	559
87	DESIGN AND DEVELOPMENT OF AN EFFECTIVE SMART GARBAGE SYSTEM USING THE INTERNET OF THINGS	IC-EB-456087	563

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Credit Card Fraud Detection - Machine Learning methods

DR.K.LAKSHMINADH[1A)], SUNKARA RAMYA[2B)],T. ANANTHA LAVANYA[3C)]

[1]*Professor, Department of Computer Science and Engineering, Narasaraopeta Engineering College, Narasaraopet,AP,India*

[2,3]*Student, Department of Computer Science and Engineering, Narasaraopeta Engineering College, Narasaraopet,AP,India*

[A)]DRKLMN7@GMAIL.COM

[b)]Ramyasunkara52@gmail.com,
[c)]lavanyatummala777@gmail.com

ABSTRACT: Credit card fraud detection is the most frequently occurring problem in the present world. because of the raise in both online transactions and e-commerce platforms. in real world, we are facing a lot of credit card problems like the unauthorized user accessing other's credit card for unauthorized purposes or fraudster uses information for his use. the main aim of the credit card fraud detection project is to detect whether a user is credit card fraud or not by using machine learning. 'fraud' is unauthorized user account other than owner of that account. machine learning algorithms easily identifies trends and patterns, without human intervention, and handling multi-dimensional and multi variety of data and has capability of handling large datasets which helps in detecting fraudulent transactions efficiently. if dataset invoking more number of rows of transaction data than expected, it takes a lot of time to manually review and find patterns in the data for fraudulent transactions. because the dataset was highly imbalanced, smote technique was used for oversampling. further, feature selection was performed and dataset was split into two parts, training data and test data. the algorithms used in the experiment wererandom forest, linear regression, decision tree, k-nearest neighbors and gaussian naïve bayes we can predict whether an user is credit card fraud ornot.

Keywords:Credit Card, Fraud, Prediction, Risk.

INTRODUCTION

There are growing number of new companies all around the world [1].Online transactions are increasing with credit cards as it is easier and time saving for the customers to purchase. But the number of frauds or fraudulent transactions are increasing annually. With widespread usage of online shopping, the customer's credit card passwords, CVV numbers and other vital information are always vulnerable. The fraudsters can easily crack into the valuable information and hence fraud cases are on the rise. By using machine learning algorithms, we are going to predict whether the transactions are fraudulent or genuine.

Many of the online fraud detection systems use transaction rules and also manually viewing of transactions to find discrepancies in transactions. Credit card fraud refers to the situation where fraudster uses credit card for their needs while owner of that credit card is not aware of that. Fraudulent transactions conducted using credit cards acquired worldwide amounted to €1.8 billion in 2016 [3]. The fraudsters can take advantage as it is time consuming process. The false positives make the genuine users worried about the transactions as it is main disadvantage and may lead to cancellation of genuine user accounts.

The model was constructed based on some algorithms in data mining. So the model was accurate in

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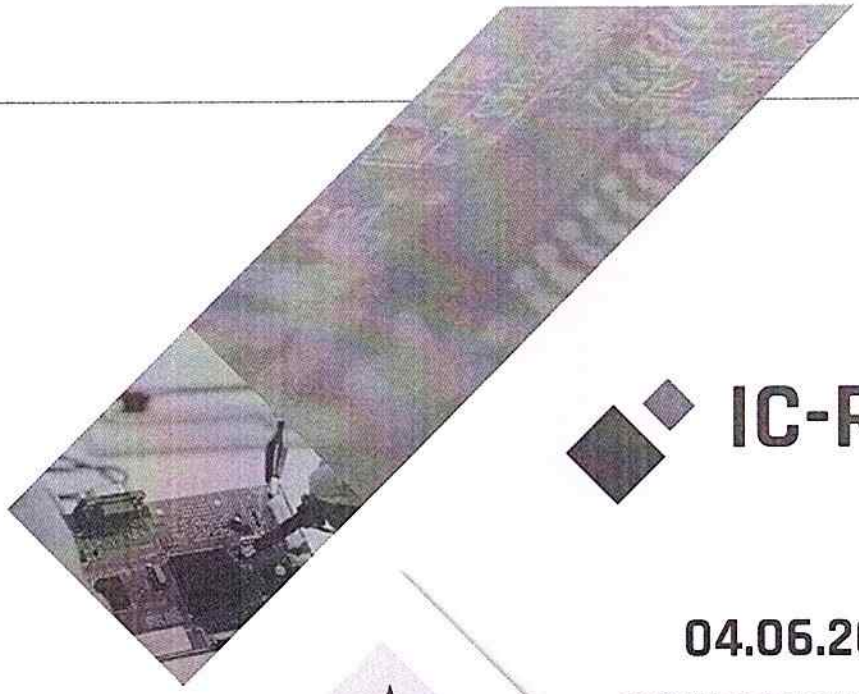

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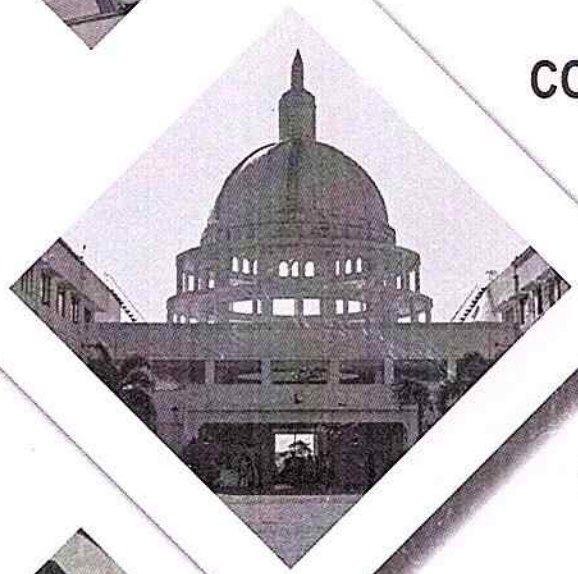

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SL.NO	PAPER TITLE	PAPER ID	PAGE NO
1	MULTI-BIT ERROR DETECTION AND CORRECTION USING THREE DIMENSIONAL PARITY FOR TCAM BASED FPGA	IC-EB-456001	1
2	INTERNET OF THINGS BASED EARLIER RECOGNITION AND INTIMATION OF WILD ANIMALS ATTACK ON FORMING LANDS	IC-EB-456002	5
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4	SMART SHOPPING CART SYSTEM USING RFID	IC-EB-456004	20
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11	LEAF DISEASE DETECTION AND ITS REMEDY USING CONVOLUTIONAL NEURAL NETWORK	IC-EB-456011	68
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13	DEEP LEARNING BASED HUMAN TO HUMAN INTERACTION DETECTION USING WI-FI SIGNALS	IC-EB-456013	80
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15	FOURIER MODIFIED DIRECT FINITE MELLIN TRANSFORM BASED TEMPLATE MATCHING APPROACH FOR PRINTED ODIYA NUMERAL RECOGNITION	IC-EB-456015	92
16	ULTRA LOW SOLAR POWER HARVESTER WITH MPPT FOR IOT SMART NODES	IC-EB-456016	97
17	BILLS AUTOMATION USING ROBOTICS PROCESSAUTOMATION	IC-EB-456017	104
18	EMAIL AUTOMATION USING ROBOTIC PROCESS AUTOMATION	IC-EB-456018	106
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24	BIGMART SALES PREDICTION USING ML	IC-EB-456024	148
25	BREAST CANCER DETECTION USING MACHINE LEARNING	IC-EB-456025	153
26	VISIBLE LIGHT COMMUNICATION FOR IMAGE TRANSMISSIONS	IC-EB-456026	164
27	CREDIT CARD FRAUD DETECTION - MACHINE LEARNING METHODS	IC-EB-456027	175
28	DESIGN AND IMPLEMENTATION OF PATIENT MONITORING ROBOT IN HOSPITALS	IC-EB-456028	190
29	DETECTION OF WHEAT SEED TYPE USING ML	IC-EB-456029	197
30	HEART ATTACK PREDICTION USING MACHINE LEARNING TECHNIQUES	IC-EB-456030	203
31	NANOTECHNOLOGY BASED EXTRACTION OF ZINC OXIDE USING AZDHIRATCHA INDICA	IC-EB-456031	211
32	MOBILE PRICE CLASSIFICATION	IC-EB-456032	216
33	IOT BASED NEONATAL HEALTHCARE DIAGNOSIS SYSTEM	IC-EB-456033	225
34	PREDICTION OF GLASS USAGE BY APPLYING MACHINE LEARNING	IC-EB-456034	232
35	PREDICTIVE ANALYSIS OF LIVER DISEASES	IC-EB-456035	240
36	THYROID DISEASE PREDICTION USING MACHINE LEARNING TECHNIQUES	IC-EB-456036	250
37	HAPTICS AND PATTERN CONTROLLED ROBOT	IC-EB-456037	258
38	SMART STREET LIGHT USING IOT	IC-EB-456038	266
39	ENACTMENT ON UPLINK AND DOWNLINK: MIMO - NOMA FOR 5G	IC-EB-456039	272
40	AIRLINE RESERVATION SYSTEM USING C PROGRAMMING	IC-EB-456040	282
41	ADVANCED ARTIFICIAL INTELLIGENCE APPLICATION FOR SMART CLASS DIGITAL TEACHING METHODOLOGY	IC-EB-456041	286
42	STRESS MONITORING SYSTEM USING EEG SENSORS	IC-EB-456042	293
43	SECURE CONSERVING MULTIPLE KEYWORD RANKED SEARCH OVER ENCRYPTED CLOUD DATA	IC-EB-456043	303
44	LIBRARY MANAGEMENT SYSTEM IN C PROGRAMMING	IC-EB-456044	309

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46	DYNAMIC HAND GESTURE USING MACHINE LEARNING TECHNIQUE	IC-EB-456046	321
47	WORKSALE-DESIGN AND DEVELOPMENT OF SAAS BASED SALES MANAGEMENT SYSTEM	IC-EB-456047	326
48	A NOVEL APPROACH FOR CONTACTLESS SCREENING OF COVID	IC-EB-456048	332
49	CLOUD BASED HIGHWAYS SAFETY SYSTEM THROUGH REAL TIME MONITORING OF DRIVER SLEEPINESS CONDITION	IC-EB-456049	337
50	SAFETY MONITORING SYSTEMS FOR COAL MINE USING WIRELESS NETWORKS	IC-EB-456050	343
51	ARTIFICIAL INTELLIGENCE-BASED SMART MIRROR (A.I.S.M)	IC-EB-456051	350
52	VEHICLE BLACK BOX SYSTEM USING RASPBERRY PI	IC-EB-456052	355
53	DESIGN AND IMPLEMENTATION OF 4-2 COMPRESSOR FOR MULTIPLIER APPLICATIONS	IC-EB-456053	360
54	INTELLIGENT CONTROL OF GRID CONNECTED HYBRID ENERGY SYSTEM WITH IMPROVED SEPIC CONVERTER	IC-EB-456054	369
55	BIDIRECTIONAL SEPIC-ZETA CONVERTER FOR BATTERY BASED GRID-TIED PV SYSTEM	IC-EB-456055	379
56	RECENT ADVANCEMENTS IN BIOMEDICAL ENGINEERING	IC-EB-456056	389
57	AIRIAL ROPE TRANSIT ROBOT FOR SURVEILLANCE CAPABILITY	IC-EB-456057	395
58	SEGMENTATION OF LUNG LESION FROM CT IMAGE	IC-EB-456058	400
59	IOT BASED TAMPERED ENERGY METER MONITORING.	IC-EB-456059	405
60	MACHINE LEARNING TECHNOLOGY USED FOR TOXIC LIQIUD DETECTION RESPONSE AND RECOVERY TIME ANALYSIS	IC-EB-456060	410
61	DESIGN OF MICRO STRIP ANTENNA FOR THE USE OF MOBILE APPLICATIONS	IC-EB-456061	415
62	MOTION OF CHARGED PARTICLES ELECTROMAGNETIC FIELD	IC-EB-456062	422
63	COMMUNICATION FOR DEAF AND DUMB USING GESTURE BASED CONTROL.	IC-EB-456063	429
64	DETECTION AND CLASSIFICATION OF SKIN DISEASE WITH THE HELP OF PI KIT	IC-EB-456064	436
65	SELF-LEARNING BRAILLE APPLICATION FOR VISUALLY IMPAIRED PEOPLE	IC-EB-456065	439
66	FEATURE RELEVANT VISUAL EXPLANATION FOR DIAGNOSIS OF COVID-19INFECTION FROM CT SCAN IMAGES USING ITERATIVA CONVOLUTION NEURAL NETWORK MODEL	IC-EB-456066	445
67	STUDY ON DATA ANALYSIS OF POSTAL SECTION ROUTINE AND ITS IMPROVEMENT USING MACHINE LEARNING	IC-EB-456067	453

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SL.NO	PAPER TITLE	PAPER ID	PAGE NO
68	OVARIAN CANCER- SIGN,SYMPTOMS,STAGES AND TREATMENT	IC-EB-456068	461
69	SMART AGRICULTURE FIELD IRRIGATION SYSTEM USING SENSORS & GSM	IC-EB-456069	466
70	A STUDY ON DATA MINING APPLICATIONS IN HEALTHCARE SECTOR	IC-EB-456070	471
71	BATTERY CHARGE CONTROLLER USING LUO CONVERTER FOR THREE PHASE GRID TIED ELECTRIC VEHICLE SYSTEM	IC-EB-456071	475
72	CASCADED FUZZY LOGIC CONTROL OF PHOTOVOLTAIC FED DYNAMIC VOLTAGE RESTORER FOR POWER DISTRIBUTION SYSTEMS	IC-EB-456072	486
73	SOLAR INTEGRATED ZETA CONVERTER FOR DFIG BASED WIND ENERGY CONVERSION SYSTEM APPLICATIONS	IC-EB-456073	494
74	A SWITCHED BOOST LANDSMAN CONVERTER WITH ANFIS BASED MPPT FOR GRID CONNECTED PV SYSTEM	IC-EB-456074	505
75	SMART BIN	IC-EB-456075	515
76	AUTOMATIC ROOM LIGHT SYSTEM	IC-EB-456076	518
77	COMPARISON BETWEEN RECTANGULAR MICROSTRIP PATCH ANTENNA WITH AND WITHOUT DEFECTED GROUND STRUCTURE AT 1.85 GHZ	IC-EB-456077	522
78	WATER LEVEL INDICATOR	IC-EB-456078	527
79	INDUSTRY TEMPERATURE CONTROL SYSTEM	IC-EB-456079	530
80	SMART STREET LIGHT CONTROL SYSTEM	IC-EB-456080	533
81	PULSE RATE MEASUREMENT USING ARDUINO	IC-EB-456081	536
82	TANK WATER LEVEL INDICATOR	IC-EB-456082	540
83	REAL TIME DC MOTOR SPEED AND DIRECTION CONTROL	IC-EB-456083	543
84	SMART TRACKING SECURITY DEVICE FOR WOMEN SAFETY USING RASPBERRY PIE HARDWARE	IC-EB-456084	547
85	A COMPREHENSIVE STUDY ON RESPIRATORY PARAMETERS USING BLUETOOTH ENABLED MULTILAYERED COVID MASK_A PREVENTIVE MEASURE	IC-EB-456085	553
86	EVALUATION AND MODELING OF 3D RECONSTRUCTION OF NASAL BONE FRACTURE USING PHOTOGRAMMETRY METHOD TO TREAT FACIAL FRACTURES	IC-EB-456086	559
87	DESIGN AND DEVELOPMENT OF AN EFFECTIVE SMART GARBAGE SYSTEM USING THE INTERNET OF THINGS	IC-EB-456087	563

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MOBILE PRICE CLASSIFICATION

Dr.S.Siva Nageswara Rao[1a)], Priyank Siva Saini Gade[2b)]

[1] *Professor, Department ofComputer Science & Engineering, Narasaraopeta Engineering College, Narasaraopet,Andhrapradesh, India.*

[2] *Student, Department ofComputer Science & Engineering, Narasaraopeta Engineering College, Narasaraopet, Andhrapradesh, India.*

[a)]profssnr@gmail.com

[b)]**priya.sivasaini@gmail.com**

Abstract- Mobile Price Classification aims to predict the price range of the mobile phone. Many features are very important to be considered to estimate price range of mobile. Some features include mobile processor, timing, mobile size and thickness, internal memory, Camera pixels, and video quality .Price range will be result of the application. Mobile now a days is one of the most selling and purchasing device. Every day new mobiles with new version and more features are launched. Hundreds and thousands of mobile are sold and purchased on daily basis.

KEYWORDS: Machine learning, Linear Regression, K Neighbours Classification, Logistic Regression, Correlation, PCA

INTRODUCTION

Price is the most effective attribute of marketing and business. The very first question of customer is about the price of items. All the customers are first worried and thinks "If he would be able to purchase something with given specifications or not". So here the mobile price class prediction is a case study for the given type of problem i.e. finding the price range of the mobile with the given specifications. The same work can be done to estimate real price of all products like cars, bikes, generators, motors, food items, medicine etc.Mobile now a days is one of the most selling and purchasing device. Every day new mobiles with new version and more features are launched.Hundreds and thousands of mobile are sold and purchased on daily basis. So here the mobile price class prediction is a case study for the given type of problem i.e. finding optimal product. The same work can be done to estimate real price of all products like cars, bikes, generators, motors, food items, medicine etc.Many features are very important to be considered to estimate price of mobile. For example Processor of the mobile, Battery timing is also very important in today's busy schedule of human being. Size and thickness of the mobile are also important decision factors. Internal memory, Camera pixels, and video quality must be under consideration. Internet browsing is also one of the most important constraints in this technological era of 21st century. And so is the list of many features based upon those, mobile price is decided. So we will use many of above mentioned features to classify whether the mobile would be very economical, economical, and expensive or very expensive.

LITERATURESURVEY

Utilizing past information to anticipate cost of accessible and new propelling item is a fascinating examination foundation for AI specialists. Sameerchand-Pudaruth [1] foresees the costs of recycled vehicles in Mauritius. He actualized numerous strategies like different direct relapse, k-closest neighbors (KNN), Decision Tree, and Naïve Bayes to anticipate the costs. Sameerchand-Pudaruth got Comparable outcomes from every one of these systems. During research it was discovered that most well known algorithms.

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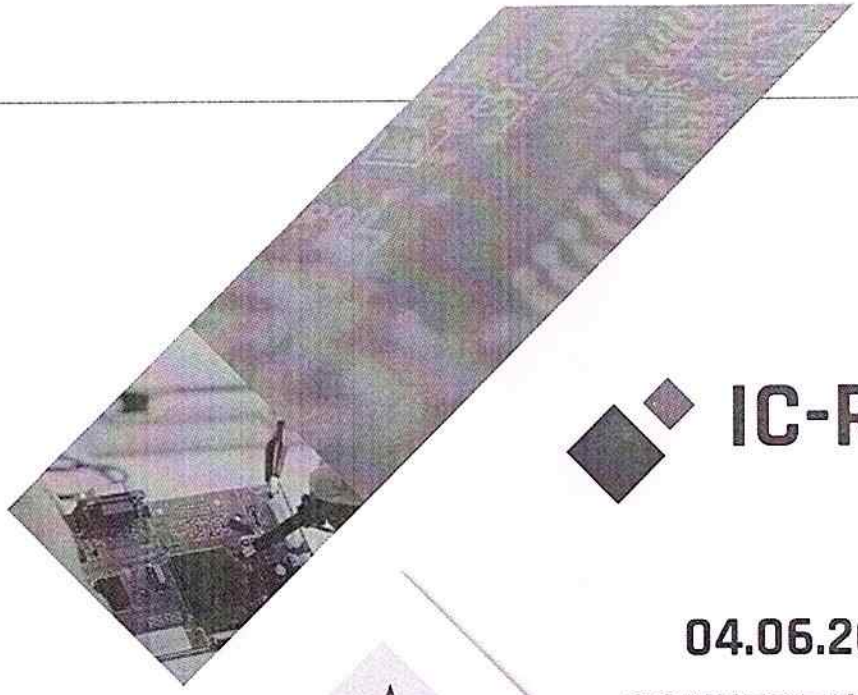

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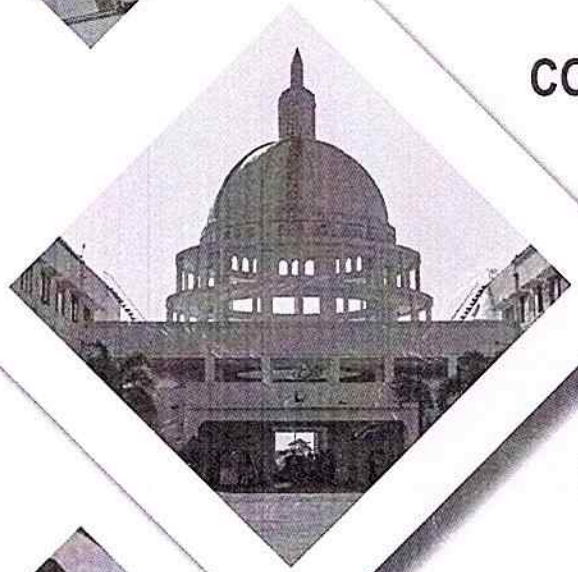

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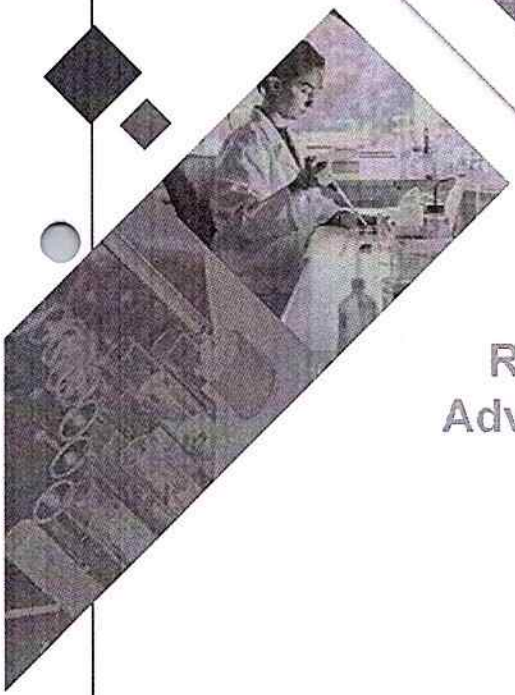

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Table of Content

SL.NO	PAPER TITLE	PAPER ID	PAGE NO
1	MULTI-BIT ERROR DETECTION AND CORRECTION USING THREE DIMENSIONAL PARITY FOR TCAM BASED FPGA	IC-EB-456001	1
2	INTERNET OF THINGS BASED EARLIER RECOGNITION AND INTIMATION OF WILD ANIMALS ATTACK ON FORMING LANDS	IC-EB-456002	5
3	FAKE NEWS DETECTION	IC-EB-456003	15
4	SMART SHOPPING CART SYSTEM USING RFID	IC-EB-456004	20
5	MULTI CLASS TEXT CLASSIFICATION FOR TELUGU NEWS ARTICLES USING TRIGRAM	IC-EB-456005	27
6	POWER AND PERFORMANCE OPTIMIZATION IN 16-BIT ALU USING POWER GATING TECHNIQUE	IC-EB-456006	32
7	IMPLEMENTATION OF OFDM SYSTEM AND ANALYSIS OF BER USING LABVIEW	IC-EB-456007	39
8	FEATURE RELEVANT VISUAL EXPLANATION FOR DIAGNOSIS OF COVID-19 INFECTION FROM CT SCAN IMAGES USING ITERATIVE CONVOLUTION NEURAL NETWORK MODEL	IC-EB-456008	45
9	SELF-LEARNING BRAILLE APPLICATION FOR VISUALLY IMPAIRED PEOPLE	IC-EB-456009	55
10	DETECTION OF DENTAL PANTAMOGRAMS JAWBONE CYSTS AND TUMOR BY USING IMAGE ENHANCEMENT TECHNIQUES	IC-EB-456010	61
11	LEAF DISEASE DETECTION AND ITS REMEDY USING CONVOLUTIONAL NEURAL NETWORK	IC-EB-456011	68
12	DIRECTION OF ARRIVAL ESTIMATION FOR UNIFORM LINEAR ANTENNA ARRAY USING MUSIC ALGORITHM	IC-EB-456012	73
13	DEEP LEARNING BASED HUMAN TO HUMAN INTERACTION DETECTION USING WI-FI SIGNALS	IC-EB-456013	80
14	ENERGY EFFICIENCY IMPROVING IN SENSOR NODE OF INTERNET OF THINGS USING MODIFIED LEACH PROTOCOL	IC-EB-456014	86
15	FOURIER MODIFIED DIRECT FINITE MELLIN TRANSFORM BASED TEMPLATE MATCHING APPROACH FOR PRINTED ODIYA NUMERAL RECOGNITION	IC-EB-456015	92
16	ULTRA LOW SOLAR POWER HARVESTER WITH MPPT FOR IOT SMART NODES	IC-EB-456016	97
17	BILLS AUTOMATION USING ROBOTICS PROCESSAUTOMATION	IC-EB-456017	104
18	EMAIL AUTOMATION USING ROBOTIC PROCESS AUTOMATION	IC-EB-456018	106
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20	A CRYPTOGRAPHIC SHARDING ACHIEVE STRIDE SCALING ABILITY	IC-EB-456020	117
21	3D REPRESENTATION OF HUMAN WORKOUTS WITH TEMPORAL ACTIVITY RECOGNITION	IC-EB-456021	126

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SL.NO	PAPER TITLE	PAPER ID	PAGE NO
22	ADVANCED ALTERING MODEL OF HEALTHCARE SYSTEM FOR IDENTIFYING PRE-CARDIAC EFFECT USING IOT	IC-EB-456022	134
23	AN EFFICIENT LIVER DISEASE PREDICTION MODEL USING MACHINE LEARNING ALGORITHMS	IC-EB-456023	139
24	BIGMART SALES PREDICTION USING ML	IC-EB-456024	148
25	BREAST CANCER DETECTION USING MACHINE LEARNING	IC-EB-456025	153
26	VISIBLE LIGHT COMMUNICATION FOR IMAGE TRANSMISSIONS	IC-EB-456026	164
27	CREDIT CARD FRAUD DETECTION - MACHINE LEARNING METHODS	IC-EB-456027	175
28	DESIGN AND IMPLEMENTATION OF PATIENT MONITORING ROBOT IN HOSPITALS	IC-EB-456028	190
29	DETECTION OF WHEAT SEED TYPE USING ML	IC-EB-456029	197
30	HEART ATTACK PREDICTION USING MACHINE LEARNING TECHNIQUES	IC-EB-456030	203
31	NANOTECHNOLOGY BASED EXTRACTION OF ZINC OXIDE USING AZDHIRATCHA INDICA	IC-EB-456031	211
32	MOBILE PRICE CLASSIFICATION	IC-EB-456032	216
33	IOT BASED NEONATAL HEALTHCARE DIAGNOSIS SYSTEM	IC-EB-456033	225
34	PREDICTION OF GLASS USAGE BY APPLYING MACHINE LEARNING	IC-EB-456034	232
35	PREDICTIVE ANALYSIS OF LIVER DISEASES	IC-EB-456035	240
36	THYROID DISEASE PREDICTION USING MACHINE LEARNING TECHNIQUES	IC-EB-456036	250
37	HAPTICS AND PATTERN CONTROLLED ROBOT	IC-EB-456037	258
38	SMART STREET LIGHT USING IOT	IC-EB-456038	266
39	ENACTMENT ON UPLINK AND DOWNLINK: MIMO - NOMA FOR 5G	IC-EB-456039	272
40	AIRLINE RESERVATION SYSTEM USING C PROGRAMMING	IC-EB-456040	282
41	ADVANCED ARTIFICIAL INTELLIGENCE APPLICATION FOR SMART CLASS DIGITAL TEACHING METHODOLOGY	IC-EB-456041	286
42	STRESS MONITORING SYSTEM USING EEG SENSORS	IC-EB-456042	293
43	SECURE CONSERVING MULTIPLE KEYWORD RANKED SEARCH OVER ENCRYPTED CLOUD DATA	IC-EB-456043	303
44	LIBRARY MANAGEMENT SYSTEM IN C PROGRAMMING	IC-EB-456044	309

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NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

SL.NO	PAPER TITLE	PAPER ID	PAGE NO
45	AUTOMATED CRIMINAL IDENTIFICATION BY FACE RECOGNITION USING OPEN CV CLASSIFIER	IC-EB-456045	314
46	DYNAMIC HAND GESTURE USING MACHINE LEARNING TECHNIQUE	IC-EB-456046	321
47	WORKSALE-DESIGN AND DEVELOPMENT OF SAAS BASED SALES MANAGEMENT SYSTEM	IC-EB-456047	326
48	A NOVEL APPROACH FOR CONTACTLESS SCREENING OF COVID	IC-EB-456048	332
49	CLOUD BASED HIGHWAYS SAFETY SYSTEM THROUGH REAL TIME MONITORING OF DRIVER SLEEPINESS CONDITION	IC-EB-456049	337
50	SAFETY MONITORING SYSTEMS FOR COAL MINE USING WIRELESS NETWORKS	IC-EB-456050	343
51	ARTIFICIAL INTELLIGENCE-BASED SMART MIRROR (A.I.S.M)	IC-EB-456051	350
52	VEHICLE BLACK BOX SYSTEM USING RASPBERRY PI	IC-EB-456052	355
53	DESIGN AND IMPLEMENTATION OF 4-2 COMPRESSOR FOR MULTIPLIER APPLICATIONS	IC-EB-456053	360
54	INTELLIGENT CONTROL OF GRID CONNECTED HYBRID ENERGY SYSTEM WITH IMPROVED SEPIC CONVERTER	IC-EB-456054	369
55	BIDIRECTIONAL SEPIC-ZETA CONVERTER FOR BATTERY BASED GRID-TIED PV SYSTEM	IC-EB-456055	379
56	RECENT ADVANCEMENTS IN BIOMEDICAL ENGINEERING	IC-EB-456056	389
57	AIRIAL ROPE TRANSIT ROBOT FOR SURVEILLANCE CAPABILITY	IC-EB-456057	395
58	SEGMENTATION OF LUNG LESION FROM CT IMAGE	IC-EB-456058	400
59	IOT BASED TAMPERED ENERGY METER MONITORING.	IC-EB-456059	405
60	MACHINE LEARNING TECHNOLOGY USED FOR TOXIC LIQIUD DETECTION RESPONSE AND RECOVERY TIME ANALYSIS	IC-EB-456060	410
61	DESIGN OF MICRO STRIP ANTENNA FOR THE USE OF MOBILE APPLICATIONS	IC-EB-456061	415
62	MOTION OF CHARGED PARTICLES ELECTROMAGNETIC FIELD	IC-EB-456062	422
63	COMMUNICATION FOR DEAF AND DUMB USING GESTURE BASED CONTROL.	IC-EB-456063	429
64	DETECTION AND CLASSIFICATION OF SKIN DISEASE WITH THE HELP OF PI KIT	IC-EB-456064	436
65	SELF-LEARNING BRAILLE APPLICATION FOR VISUALLY IMPAIRED PEOPLE	IC-EB-456065	439
66	FEATURE RELEVANT VISUAL EXPLANATION FOR DIAGNOSIS OF COVID-19 INFECTION FROM CT SCAN IMAGES USING ITERATIVE CONVOLUTION NEURAL NETWORK MODEL	IC-EB-456066	445
67	STUDY ON DATA ANALYSIS OF POSTAL SECTION ROUTINE AND ITS IMPROVEMENT USING MACHINE LEARNING	IC-EB-456067	453

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68	OVARIAN CANCER- SIGN.SYMPTOMS.STAGES AND TREATMENT	IC-EB-456068	461
69	SMART AGRICULTURE FIELD IRRIGATION SYSTEM USING SENSORS & GSM	IC-EB-456069	466
70	A STUDY ON DATA MINING APPLICATIONS IN HEALTHCARE SECTOR	IC-EB-456070	471
71	BATTERY CHARGE CONTROLLER USING LUO CONVERTER FOR THREE PHASE GRID TIED ELECTRIC VEHICLE SYSTEM	IC-EB-456071	475
72	CASCADED FUZZY LOGIC CONTROL OF PHOTOVOLTAIC FED DYNAMIC VOLTAGE RESTORER FOR POWER DISTRIBUTION SYSTEMS	IC-EB-456072	486
73	SOLAR INTEGRATED ZETA CONVERTER FOR DFIG BASED WIND ENERGY CONVERSION SYSTEM APPLICATIONS	IC-EB-456073	494
74	A SWITCHED BOOST LANDSMAN CONVERTER WITH ANFIS BASED MPPT FOR GRID CONNECTED PV SYSTEM	IC-EB-456074	505
75	SMART BIN	IC-EB-456075	515
76	AUTOMATIC ROOM LIGHT SYSTEM	IC-EB-456076	518
77	COMPARISON BETWEEN RECTANGULAR MICROSTRIP PATCH ANTENNA WITH AND WITHOUT DEFECTED GROUND STRUCTURE AT 1.85 GHZ	IC-EB-456077	522
78	WATER LEVEL INDICATOR	IC-EB-456078	527
79	INDUSTRY TEMPERATURE CONTROL SYSTEM	IC-EB-456079	530
80	SMART STREET LIGHT CONTROL SYSTEM	IC-EB-456080	533
81	PULSE RATE MEASUREMENT USING ARDUINO	IC-EB-456081	536
82	TANK WATER LEVEL INDICATOR	IC-EB-456082	540
83	REAL TIME DC MOTOR SPEED AND DIRECTION CONTROL	IC-EB-456083	543
84	SMART TRACKING SECURITY DEVICE FOR WOMEN SAFETY USING RASPBERRY PIE HARDWARE	IC-EB-456084	547
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BREAST CANCER DETECTIONUSING MACHINE LEARNING

K. B. L. Pujitha[1a)], K. Sai Sree[2b)], Kotha Lakshmi Sruthi[3c)]M.Sireesha[4d)]

[1,2,3]*Department of Computer Science and Engineering, Narasaraopeta Engineering College,Narasaraopet, AP, India.*

[4]*Asst.Prof.,Department of Computer Science and Engineering, Narasaraopeta Engineering College,Narasaraopet, AP, India.*

[a)]kurakulapujitha12@gmail.com
[b)]saisreek2001@gmail.com
[c)]sruthikotha1999@gmail.com
[d)]moturisireesha@gmail.com

ABSTRACT: Breast cancer is one of the most common and leading causes of cancer among women. Currently, it has become the common health issue, and its incidence has increased recently. There is a chance of fifty percent for one of two women diagnosed with breast cancer die in the cases of Indian women. India has witnessed 30% of the cases of breast cancer during the last few years and it is likely to increase. Breast cancer in India accounts that one woman is diagnosed every two minutes and every nine minutes, one woman dies. Early detection and diagnosis can save the lives of cancer patients. This paper presents a comparison of 6 machine learning (ML) algorithms: Random Forest Classifier, Logistic Regression, K-Nearest Neighbours, Decision Tree, Naïve Bayes, SVC (Support Vector Classifier) on the Wisconsin Diagnostic Breast Cancer Dataset (WDBC Dataset). Based on the results of the classification model which gives the highest accuracy will be used for the Breast Cancer Prediction.

INTRODUCTION

Breast cancer is a disease in which cells in the breast grow out of control. There are different kinds of breast cancer. Breast cancer tumour is uncontrolled development of the cells and increases the tumour. This causes because of unusual changes or transformations, in the qualities answerable for directing development of cells and keep them healthy [1]. The kind of breast cancer depends on which cells in the breast turn into cancer. Breast cancer can begin in different parts of the breast. A breast is made up of three main parts: lobules, ducts, and connective tissue. The lobules are the glands that produce milk. The ducts are tubes that carry milk to the nipple. The connective tissue (which consists of fibrous and fatty tissue) surrounds and holds everything together. Most breast cancers begin in the ducts or lobules. Breast cancer can spread outside the breast through blood vessels and lymph vessels. When breast cancer spreads to other parts of the body, it is said to have metastasized. Machine Learning techniques play a dominant role in disease diagnosis process[6],[8],[11].

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Table of Content

SL.NO	PAPER TITLE	PAPER ID	PAGE NO
1	MULTI-BIT ERROR DETECTION AND CORRECTION USING THREE DIMENSIONAL PARITY FOR TCAM BASED FPGA	IC-EB-456001	1
2	INTERNET OF THINGS BASED EARLIER RECOGNITION AND INTIMATION OF WILD ANIMALS ATTACK ON FORMING LANDS	IC-EB-456002	5
3	FAKE NEWS DETECTION	IC-EB-456003	15
4	SMART SHOPPING CART SYSTEM USING RFID	IC-EB-456004	20
5	MULTI CLASS TEXT CLASSIFICATION FOR TELUGU NEWS ARTICLES USING TRIGRAM	IC-EB-456005	27
6	POWER AND PERFORMANCE OPTIMIZATION IN 16-BIT ALU USING POWER GATING TECHNIQUE	IC-EB-456006	32
7	IMPLEMENTATION OF OFDM SYSTEM AND ANALYSIS OF BER USING LABVIEW	IC-EB-456007	39
8	FEATURE RELEVANT VISUAL EXPLANATION FOR DIAGNOSIS OF COVID-19 INFECTION FROM CT SCAN IMAGES USING ITERATIVE CONVOLUTION NEURAL NETWORK MODEL	IC-EB-456008	45
9	SELF-LEARNING BRAILLE APPLICATION FOR VISUALLY IMPAIRED PEOPLE	IC-EB-456009	55
10	DETECTION OF DENTAL PANTAMOGRAMS JAWBONE CYSTS AND TUMOR BY USING IMAGE ENHANCEMENT TECHNIQUES	IC-EB-456010	61
11	LEAF DISEASE DETECTION AND ITS REMEDY USING CONVOLUTIONAL NEURAL NETWORK	IC-EB-456011	68
12	DIRECTION OF ARRIVAL ESTIMATION FOR UNIFORM LINEAR ANTENNA ARRAY USING MUSIC ALGORITHM	IC-EB-456012	73
13	DEEP LEARNING BASED HUMAN TO HUMAN INTERACTION DETECTION USING WI-FI SIGNALS	IC-EB-456013	80
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18	EMAIL AUTOMATION USING ROBOTIC PROCESS AUTOMATION	IC-EB-456018	106
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23	AN EFFICIENT LIVER DISEASE PREDICTION MODEL USING MACHINE LEARNING ALGORITHMS	IC-EB-456023	139
24	BIGMART SALES PREDICTION USING ML	IC-EB-456024	148
25	BREAST CANCER DETECTION USING MACHINE LEARNING	IC-EB-456025	153
26	VISIBLE LIGHT COMMUNICATION FOR IMAGE TRANSMISSIONS	IC-EB-456026	164
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29	DETECTION OF WHEAT SEED TYPE USING ML	IC-EB-456029	197
30	HEART ATTACK PREDICTION USING MACHINE LEARNING TECHNIQUES	IC-EB-456030	203
31	NANOTECHNOLOGY BASED EXTRACTION OF ZINC OXIDE USING AZDHIRATCHA INDICA	IC-EB-456031	211
32	MOBILE PRICE CLASSIFICATION	IC-EB-456032	216
33	IOT BASED NEONATAL HEALTHCARE DIAGNOSIS SYSTEM	IC-EB-456033	225
34	PREDICTION OF GLASS USAGE BY APPLYING MACHINE LEARNING	IC-EB-456034	232
35	PREDICTIVE ANALYSIS OF LIVER DISEASES	IC-EB-456035	240
36	THYROID DISEASE PREDICTION USING MACHINE LEARNING TECHNIQUES	IC-EB-456036	250
37	HAPTICS AND PATTERN CONTROLLED ROBOT	IC-EB-456037	258
38	SMART STREET LIGHT USING IOT	IC-EB-456038	266
39	ENACTMENT ON UPLINK AND DOWNLINK: MIMO - NOMA FOR 5G	IC-EB-456039	272
40	AIRLINE RESERVATION SYSTEM USING C PROGRAMMING	IC-EB-456040	282
41	ADVANCED ARTIFICIAL INTELLIGENCE APPLICATION FOR SMART CLASS DIGITAL TEACHING METHODOLOGY	IC-EB-456041	286
42	STRESS MONITORING SYSTEM USING EEG SENSORS	IC-EB-456042	293
43	SECURE CONSERVING MULTIPLE KEYWORD RANKED SEARCH OVER ENCRYPTED CLOUD DATA	IC-EB-456043	303
44	LIBRARY MANAGEMENT SYSTEM IN C PROGRAMMING	IC-EB-456044	309

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SL.NO	PAPER TITLE	PAPER ID	PAGE NO
45	AUTOMATED CRIMINAL IDENTIFICATION BY FACE RECOGNITION USING OPEN CV CLASSIFIER	IC-EB-456045	314
46	DYNAMIC HAND GESTURE USING MACHINE LEARNING TECHNIQUE	IC-EB-456046	321
47	WORKSALE-DESIGN AND DEVELOPMENT OF SAAS BASED SALES MANAGEMENT SYSTEM	IC-EB-456047	326
48	A NOVEL APPROACH FOR CONTACTLESS SCREENING OF COVID	IC-EB-456048	332
49	CLOUD BASED HIGHWAYS SAFETY SYSTEM THROUGH REAL TIME MONITORING OF DRIVER SLEEPINESS CONDITION	IC-EB-456049	337
50	SAFETY MONITORING SYSTEMS FOR COAL MINE USING WIRELESS NETWORKS	IC-EB-456050	343
51	ARTIFICIAL INTELLIGENCE-BASED SMART MIRROR (A.I.S.M)	IC-EB-456051	350
52	VEHICLE BLACK BOX SYSTEM USING RASPBERRY PI	IC-EB-456052	355
53	DESIGN AND IMPLEMENTATION OF 4-2 COMPRESSOR FOR MULTIPLIER APPLICATIONS	IC-EB-456053	360
54	INTELLIGENT CONTROL OF GRID CONNECTED HYBRID ENERGY SYSTEM WITH IMPROVED SEPIC CONVERTER	IC-EB-456054	369
55	BIDIRECTIONAL SEPIC-ZETA CONVERTER FOR BATTERY BASED GRID-TIED PV SYSTEM	IC-EB-456055	379
56	RECENT ADVANCEMENTS IN BIOMEDICAL ENGINEERING	IC-EB-456056	389
57	AIRIAL ROPE TRANSIT ROBOT FOR SURVEILLANCE CAPABILITY	IC-EB-456057	395
58	SEGMENTATION OF LUNG LESION FROM CT IMAGE	IC-EB-456058	400
59	IOT BASED TAMPERED ENERGY METER MONITORING.	IC-EB-456059	405
60	MACHINE LEARNING TECHNOLOGY USED FOR TOXIC LIQIUD DETECTION RESPONSE AND RECOVERY TIME ANALYSIS	IC-EB-456060	410
61	DESIGN OF MICRO STRIP ANTENNA FOR THE USE OF MOBILE APPLICATIONS	IC-EB-456061	415
62	MOTION OF CHARGED PARTICLES ELECTROMAGNETIC FIELD	IC-EB-456062	422
63	COMMUNICATION FOR DEAF AND DUMB USING GESTURE BASED CONTROL.	IC-EB-456063	429
64	DETECTION AND CLASSIFICATION OF SKIN DISEASE WITH THE HELP OF PI KIT	IC-EB-456064	436
65	SELF-LEARNING BRAILLE APPLICATION FOR VISUALLY IMPAIRED PEOPLE	IC-EB-456065	439
66	FEATURE RELEVANT VISUAL EXPLANATION FOR DIAGNOSIS OF COVID-19 INFECTION FROM CT SCAN IMAGES USING ITERATIVE CONVOLUTION NEURAL NETWORK MODEL	IC-EB-456066	445
67	STUDY ON DATA ANALYSIS OF POSTAL SECTION ROUTINE AND ITS IMPROVEMENT USING MACHINE LEARNING	IC-EB-456067	453

SL.NO	PAPER TITLE	PAPER ID	PAGE NO
68	OVARIAN CANCER- SIGN.SYMPTOMS,STAGES AND TREATMENT	IC-EB-456068	461
69	SMART AGRICULTURE FIELD IRRIGATION SYSTEM USING SENSORS & GSM	IC-EB-456069	466
70	A STUDY ON DATA MINING APPLICATIONS IN HEALTHCARE SECTOR	IC-EB-456070	471
71	BATTERY CHARGE CONTROLLER USING LUO CONVERTER FOR THREE PHASE GRID TIED ELECTRIC VEHICLE SYSTEM	IC-EB-456071	475
72	CASCADED FUZZY LOGIC CONTROL OF PHOTOVOLTAIC FED DYNAMIC VOLTAGE RESTORER FOR POWER DISTRIBUTION SYSTEMS	IC-EB-456072	486
73	SOLAR INTEGRATED ZETA CONVERTER FOR DFIG BASED WIND ENERGY CONVERSION SYSTEM APPLICATIONS	IC-EB-456073	494
74	A SWITCHED BOOST LANDSMAN CONVERTER WITH ANFIS BASED MPPT FOR GRID CONNECTED PV SYSTEM	IC-EB-456074	505
75	SMART BIN	IC-EB-456075	515
76	AUTOMATIC ROOM LIGHT SYSTEM	IC-EB-456076	518
77	COMPARISON BETWEEN RECTANGULAR MICROSTRIP PATCH ANTENNA WITH AND WITHOUT DEFECTED GROUND STRUCTURE AT 1.85 GHZ	IC-EB-456077	522
78	WATER LEVEL INDICATOR	IC-EB-456078	527
79	INDUSTRY TEMPERATURE CONTROL SYSTEM	IC-EB-456079	530
80	SMART STREET LIGHT CONTROL SYSTEM	IC-EB-456080	533
81	PULSE RATE MEASUREMENT USING ARDUINO	IC-EB-456081	536
82	TANK WATER LEVEL INDICATOR	IC-EB-456082	540
83	REAL TIME DC MOTOR SPEED AND DIRECTION CONTROL	IC-EB-456083	543
84	SMART TRACKING SECURITY DEVICE FOR WOMEN SAFETY USING RASPBERRY PIE HARDWARE	IC-EB-456084	547
85	A COMPREHENSIVE STUDY ON RESPIRATORY PARAMETERS USING BLUETOOTH ENABLED MULTILAYERED COVID MASK_A PREVENTIVE MEASURE	IC-EB-456085	553
86	EVALUATION AND MODELING OF 3D RECONSTRUCTION OF NASAL BONE FRACTURE USING PHOTOGRAMMETRY METHOD TO TREAT FACIAL FRACTURES	IC-EB-456086	559
87	DESIGN AND DEVELOPMENT OF AN EFFECTIVE SMART GARBAGE SYSTEM USING THE INTERNET OF THINGS	IC-EB-456087	563

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THYROID DISEASE PREDICTIONUSING MACHINE LEARNING TECHNIQUES

M.Sireesha[1a)], M.Chandrani[2b)]

[1]*Asst.Professor Department of CSE, Narasaraopeta Engineering College*
[2]*Department of Computer Science &Engineering,Narasaraopeta Engineering College, Narasaraopet,*

[a)]moturisireesha@gmail.com
[b)]chandranimadhira@gmail.com

ABSTRACT: Thyroid disease is very common disease in human, but it is not a deadly disease. Nowadays most of the women are suffering from thyroid disease than male. There are two types in thyroid disease like hypothyroid and hyperthyroid disease. These diseases giving many side effects such as weight gain, weight loss, stress and so on to our human body. If this disease is detected in earlier stage, then physician can give proper treatment to the patients. Machine learning algorithms are used to diagnosis for many diseases after very important improvements of classification algorithms as well as having large data sets and high performing computational units. All of these increased the accuracy of these methods. The diagnosis of thyroid gland disorders is one of the applications for important classification problem. This study majorly focuses on thyroid gland medical diseases caused by underactive or overactive thyroid glands. The dataset used for the study was taken from KEEL repository. Classification of this thyroid disease dataset was a considerable task using decision tree algorithm. The overall prediction accuracy is 100% for training and testing. In this study, we developed the Thyroid Disease Prediction website to diagnosis the thyroid disease, an Intelligent thyroid disease prediction tool in Python, which can effectively help to make the right decision, has been designed using Spyder, which is python IDE.

INTRODUCTION

Classification algorithms are very important category of supervised machine learning algorithms. These algorithms require a very large training set. These training data sets are consisting of many features or attributes which describe the individual sample. Since we are doing supervised learning algorithm. All the training set are labelled correctly. The classification algorithms such as decision trees, Gaussian Naïve Bayes, Random Forest, K-nearest Neighbors and support vector machines (SVM), develop model with these data with many different parameters. When we have a new unlabeled sample, we can use the model to predict the label of the new sample. These techniques are used for disease diagnosis to help doctor to effectively label the newcase.

The thyroid [1][2] releases two principal hormones. The first is called thyroxine (T4) and the other one is triiodothyronine (T3) into the blood stream. The main functions of the thyroid hormones are to regulate the growth rate of metabolism. There are two common problems of thyroid disorder: Hyperthyroidism and Hypothyroidism.

The first one releases too much thyroid hormone into the blood stream and the second one releases too low thyroid hormones to the blood stream. These means that thyroids are very active in Hyperthyroidism. In contrast, thyroids are not active in Hypothyroidism.

A decision tree is one of the very effective machine learning classifiers where the algorithm makes a tree structure, where every non-leaf node denotes a test on an attribute, each branch performs an outcome of the test and each leaf node holds a class label. Decision tree is very simple and effective classifier so this algorithm can be used in several application areas such as medicine, financial analysis, astronomy and molecular biology for classification. We are going to use decision tree to identify and predict thyroid diseases whether new patient data (symptom or features) show thyroid disorder ornormal, because among many algorithms decision tree resulted in highest accuracy with 99.57%.

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Table of Contents

S. No	Paper Title/ Author Name	Page. No
1	Application of Nature-Inspired Swarm Optimization Algorithms in Artificial Neural Networks Abhinav Srivastava, Puja Chaudhury	1
2	Artificial Intelligent for Speech Reproduction of Information and Knowledge of Ancient Books Liming Tang, Chongyu Li	7
3	Thyroid Nodule Detection using Artificial Neural Network Xhitij A. Kesarkar, K. V. Kulhalli	11
4	Smart Device Waiter using AI image and Voice Recognition with an IPS Navigation System Gaby Abou Haidar, Nouhad Hachem, Mohammad Awad	16
5	Early Stage Lung Cancer Diagnosis using ANN Classifier Shailesh S. Bhise, S. R. Khot	22
6	A Survey on Artificial Intelligence based Techniques to convert user Interface Design Mock-Ups to Code Harsh Dave, Sarah Sonje, Jaswantsingh Pardeshi, Sheetal Chaudhari, Pooja Raundale	28
7	Orderista - AI-based Food Ordering Application Tejas Raibagi, Ashwin Vishwakarma, Jahnvi Naik, Rujata Chaudhari, Geetanjali	34
8	Smart Borewell Child Rescue System through Wireless Monitoring using Artificial Intelligence Nandhitha Bala, V.Maria Anu, Prashanthi Niharika, L.Mary Gladence, S.Revathy	38
9	Correlation Analysis of Financial Indicators and Stock Price Fluctuations based on Artificial Intelligence System Shu Chen	43
10	A Survey on Future of Augmented Reality with AI in Education Kaviyaraj R, M. Uma	47
11	Revamping Supermarkets with AI and RSSi Prashant Kaushik, Anshul Sharma, Gurjit Singh Bhathal	53
12	Impact of Artificial Intelligence on Recruitment and Selection of Information Technology Companies A. Hemalatha, P. Barani Kumari, Nishad Nawaz, Vijayakumar Gajenderan	60
13	Pneumonia Detection using Image Processing and Deep Learning Harsh Agrawal	67
14	Measuring the Heart Attack Possibility using Different Types of Machine Learning Algorithms Maria Sultana Keya, Muhammad Shamsojjaman, Faruq Hossain, Farzana Akter, Fakrul Islam, Minhaz Uddin Emon	74
15	Assessment Study for E-Learning using Bayesian Network Rohit B Kaliwal, Santosh L Deshpande	79
16	Covid Detection from X-Ray and CT Scans using Transfer Learning – A Study Shailender Kumar, Mohd Talib, Naman, Praduman Verma	85

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Principal
NARASARAOPETA ENGINEERING COLLEGE
(AUTONOMOUS)
NARASARAOPET - 5
Guntur (Dist.), A.P.

17	Impact of Federated Learning on Smart Buildings Angan Mitra, Yanik Ngoko, Denis Trystram	93
18	Brain Tumor Detection using Deep Learning and Image Processing Aryan Sagar Methil	100
19	Machine Learning-based Classification of Dementia Types: MRI Study V. P. Subramanyam Rallabandi, Krishnamurthy Seetharaman	109
20	Transfer Learning based Breast Cancer Classification using One-Hot Encoding Technique Karthiga R, Usha G, Raju N, Narasimhan K	115
21	Sentiment Analysis for Product Rating using a Deep Learning Approach Krishna Kumar Mohbey	121
22	Prediction of Type-2 Diabetes using Machine Learning Algorithms Valasapalli Mounika, Devi Sree Neeli, Gorla Suma Sree, Parimi Mourya, Madala Aravind Babu	127
23	A Comparative Study of the Performance of Machine Learning based Load Forecasting Methods P. Prashanthi, Priyadarsini . K	132
24	Performance Analysis of Supervised Machine Learning Algorithms for Diabetes and Breast Cancer Dataset Aayushi Bansal, Anita Singhrova	137
25	Review on Image Classification Techniques in Machine Learning for Satellite Imagery N. Thamaraikannan, S. Manju	144
26	A Machine Learning Approach for Prediction System and analysis of Nutrients Uptake for better Crop Growth in the Hydroponics System Swapnil Verma, Sushopti D.Gawade	150
27	Sentiment Analysis on Food Review using Machine Learning Approach Nourin Islam, Nasrin Akter, Abdus Sattar	157
28	Analysis on Prediction of Plant Leaf Diseases using Deep Learning S. Nandhini, K. Ashokkumar	165
29	Trajectory Planning & Computation of Inverse Kinematics of SCARA using Machine Learning M Aruna Devi, Prajwal S Hebbar, Praveen D Jadhav, Mohammed Mohsin, Nepal Adhikary, S Krishna Shashank	170
30	Paediatric Sickle Cell Detection using Deep Learning - A Review S. Nikkath Bushra, G. Shobana	177
31	Recognition of Single and Multiple Partial Discharge patterns using Deep Learning Algorithm T. Sukumar, A. Prince, G. Balaji, S. Praveen Kumar, B. Vigneshwaran	184
32	A Systematic Review: Deep Learning based E-Learning Recommendation System Roshan Bhanuse, Sandip Mal	190
33	Deep learning-based Techniques for the Automatic Segmentation of Organs in Thoracic Computed Tomography Images: A Comparative Study Malvika Ashok, Abhishek Gupta	198
34	Network Security: Threat Model, Attacks, and IDS Using Machine Learning Divya Kapil, Nidhi Mehra, Atika Gupta, Sudhanshu Maurya, Anupriya Sharma	203
35	Yolo-v4 Deep Learning Model for Medical Face Mask Detection Sheshang Degadwala, Dhairya Vyas, Utsho Chakraborty, Abu Raihan Dider, Haimanti Biswas	209

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NARASARAOPETA ENGINEERING COLLEGE
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NARASARAOPET - 522 601.
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36	Divorce Case Prediction using Machine Learning Algorithms Aditya Sharma, Arshdeep Singh Chudhey, Mrityunjay Singh	214
37	Machine Learning-based Pharmaceutical Tablet Inspection and Recognition Techniques –A Review Urja Patel	220
38	Scrutinizing of Fake News using Machine Learning Techniques S. Gowri, Jenila J, Bathula Sowmya Reddy, M. Antony Sheela	223
39	A Comprehensive Analysis of Deep Learning Techniques for Documentation Classification Vinod Kumar, Ishika Jain, Ayushdeep Dabas, Kartik Pawar	228
40	Collaborative Learning for Improving Intellectual Skills of Dropout Students using Datamining Techniques M. Revathy, S. Kamalakkannan	236
41	A Survey on Bone Fracture Identification Techniques using Quantitative and Learning based Algorithms Saranya A, K. Kottilingam	241
42	Effective Prediction of Heart Disease using Data Mining and Machine Learning: A Review Simran Verma, Abhishek Gupta	249
43	A Review on Machine Learning based Student`s Academic Performance Prediction Systems Rahul Katarya, Aryan Garg, Jalaj Gaba, Varsha Verma	254
44	A Review on Reinforcement Learning based News Recommendation Systems and its Challenges Sindhuja Bangari, Shantharam Nayak, Ladly Patel, Rashmi K T	260
45	Crime Type and Occurrence Prediction using Machine Learning Algorithm Kanimozhi N, Keerthana N V, Pavithra G S, Ranjitha G, Yuvarani S	266
46	Identification of Drug Discovery for Patients using Machine Learning Jegan Antony Marcilin. L, Rexiline Sheeba. I, Sugadev.M, Balamurugan Velan, Chitra P	274
47	Text Recognition in Moving Vehicles using Deep learning Neural Networks K. T. Ilayarajaa, V. Vijayakumar, M. Sugadev, T. Ravi	279
48	Review of Machine Learning methods for Identification of Cyberbullying in Social Media Neha Singh, Sanjay Kumar Sharma	284
49	A review on Deep Learning based Pneumonia Detection Systems Shailender Kumar, Pankaj Singh, Mohit Ranjan	289
50	Machine Learning Algorithms in Smart Antenna and Arrays for Internet of Things Applications Abhishek Javali, Anindita Sahoo, Jagrati Gupta	297
51	ECG Classification using a Hybrid Deep learning Approach SK Mohammad Rafi, Shaheda Akthar	302
52	Breast Cancer Prediction using Deep Learning Techniques Apparna Allada, Prasad Chitturi, Mannem Siva Naga Prasad, Ganaga Rama Koteswara Rao, Hema Chindu, Poojitha Tatineni	306
53	A Hybrid Machine Learning and Data Mining based Approach to Network Intrusion Detection Abhinav Singhal, Akash Maan, Dinesh Vishvakarma, Daksh Chaudhary	312
54	MF - Ensemble Algorithm with threshold to Enhance the Supervised Learning Classifier Accuracy on Big Data	319

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	S. Banumathi, A. Aloysius	
55	Deep Learning for Lung Cancer Prediction using NSCLS patients CT Information Naresh Cherukuri, Prasad Chitturi, Naga Raju Bethapudi, CMAK Zeelan Basha, Venkata Sai Krishna Thotakura, Raja Mani Mummidi	325
56	A Comparative Approach To Predict Corona Virus using Machine Learning Rohini. M, Naveena. K. R, Jothipriya. G, Kameshwaran. S, Jagadeeswari. M	331
57	Post COVID-19 Twitter user's Emotions Classification using Deep Learning Techniques in India Poojitha Tatineni, Bharghavi Kanuri, Prasad Chitturi, B Sobhan Babu, Ganga Rama Koteswara Rao, Cherukuri Naresh	338
58	COVID-19 Diagnosis using X-Ray Images and Deep Learning Shivani Sharma, ShamikTiwari	344
59	Predicting the E-Learners Learning Style by using Support Vector Regression Technique Suresh K, Meghana J, Pooja M E	350
60	Machine Learning based Hand Sign Recognition Greeshma Pala, Satish Shivaji Kumbhar, Jagruti Bhagwan Jethwani, Shruti Dilip Patil	356
61	Primary Stage of Diabetes Prediction using Machine Learning Approaches Minhaz Uddin Emon, Maria Sultana Keya, Md. Salman Kaiser, Md. Ariful islam, Tabassum Tanha, Md. Sabab Zulfiker	364
62	Unsupervised Learning-based Vegetation Change Detection with Landsat 8 Data Md. Nur Uddin Sarker, Farah Ulfat, Md Zunayed Ahmed Siddique, Tanjila Farah	368
63	Comparative Question Answering System based on Natural Language Processing and Machine Learning Rohit Arora, Parth Singh, Hemlata Goyal, Sunita Singhal, Smita Vijayvargiya	373
64	Reinforcement Learning based Intelligent Traffic Signal Control using n-step SARSA Akshay Kekuda, R. Anirudh, Mithun Krishnan	379
65	Comparative Study Between Deep Learning Techniques and Random Forest Approach for HRRP Based Radar Target Classification M. Justin Sagayaraj, V.Jithesh, Dange Roshani	385
66	Design of Intelligent University Financial Management System based on B/S Structure and Complex Data Mining Ying Fang, Zebang Wang	389
67	Digital analysis of the Current Situation of Network Ideological Propaganda based on Remote Data Modeling Wenjun Liu	393
68	Image Classification using Tensor Flow Rishabh Singhla, Prince Singh, Rosy Madaan, Supriya Panda	398
69	Twitter Spam Detection using Natural Language Processing by Encoder Decoder Model Kshitiz Badola, Mridul Gupta	402
70	A Novel Score-based Multi-Source Fake News Detection using Gradient Boosting Algorithm S. Selva Birunda, R. Kanniga Devi	406
71	Design of Intelligent Distance Music Education System based on Pan-communication Technology Yan Lin	415

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Principal
NARASARAOPETA ENGINEERING COLLEGE
(AUTONOMOUS)
NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

72	Data Mining based Intelligent Interior Design Paradigm with Information Flow Communication Model Rui He	419
73	Construction Method of Data Security Protection System of Power Information System based on Big Data Technology Jin Li, Zhengwen Zhang, Hua Cai, Lingyu Zhang, Xindong Huang	423
74	Design of Intelligent Construction Engineering Frame based on Communication Information Visualization Xiaoxing Kou	428
75	Convalescent Plasma Therapy: Data Driven Approach for finding the Best Plasma Donors M N Noorshidha, G. Aghila	432
76	Innovative Study on Online Ideological Education in the era of New Media, Face Recognition and Blockchain Hongrong Gao	440
77	Design of Digital Museum Narrative Space based on Perceptual Experience Data Mining and Computer Vision Guoyuan Cao, Keming Zeng	444
78	Computer-aided Measurement Modeling Analysis of behavioral Psychology with brain-Computer Interface Analysis Weijie Zhang, Zhichen Zhang, Kaitai Xiao	449
79	Construction of Smart Home-School Collaboration System based on Distributed Cluster Technology Yubei Yang	454
80	Resource Management Approach for Pervasive Computing in Smart Cities Padmanabhan P, Kumaresan M	458
81	Smart Traffic System using Traffic Flow Models Arihant Kamdar, Jigarkumar Shah	465
82	Automated Sign Language Interpreter using DataGloves Anupama H S, Usha B A, Spoorthy Madhushankar, Varsha Vivek, Yashaswini Kulkarni	472
83	Optimum Tilt and Orientation Angle Determination with Application of Solar Data Neha Sharma, Pawan Kumar Tiwari, Gulhasan Ahmad, Harsh Sharma	477
84	Enhanced Stacking Ensemble Model in Predictive Analytics of Environmental Sensor Data J. Angelin Jebamalar, T. Kamalakannan	482
85	Face Recognition based Activity Detection for Security Application Harshada Badave, Madhav Kuber	487
86	Head Pose Estimation based Robust Multicamera Face Recognition Harshada Badave, Madhav Kuber	492
87	SSVEP based Correlation Analysis for Efficiency Enhancement of Brain- Computer Interfaces Ashwini S. R, H. C. Nagaraj	496
88	Design of ESP8266 Smart Home using MQTT and Node-RED Paul Macheso, Tiwonge D. Manda, Sylvester Chisale, Nelson Dzupire, Justice Mlatho, Didacienne Mukanyirigira	502
89	Mobile Application for Flood Disaster in Jakarta Vito Lauda Putra Anta , Ivander Albert Liestyo , Harco Leslie Hendric Spits Warnars	506

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NARASARAOPETA ENGINEERING COLLEGE
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Guntur (Dist.), A.P.

90	Method of Text Summarization using LSA and Sentence based Topic Modelling with BERT Hritvik Gupta, Mayank Patel	511
91	Speech Enhancement using K-Sparse Autoencoder Techniques Sujoy Kumar Roy Chowdhury, Amitava Chatterjee	518
92	Garbage Detection using Advanced Object Detection Techniques Deep Patel, Foram Patel, Samir Patel, Nihar Patel, Dhruvil Shah, Vibha Patel	526
93	A Comprehensive Survey on Movie Recommendation Systems R. Lavanya, Utkarsh Singh, Vibhor Tyagi	532
94	Label Propagation from Laplacian Score for Semi-Supervised Attribute Selection Nithya Roopa S, D. Sathya, V. Sudha	537
95	Artificial Intelligence based Smart Door with Face Mask Detection Baluprithviraj. K. N, Bharathi. K. R, Chendhuran. S, Lokeshwaran. P	543
96	Convolutional Neural Network for Diabetic Retinopathy Detection Shital N. Firke, Ranjan Bala Jain	549
97	An Object Segmentation Approach for Mobile Lidar Point Clouds Musa Şervan Şahin, Tankut Acarman	554
98	Sentiment Analysis of COVID-19 Nationwide Lockdown Effect in India Nida Afroz, Vijeta Sharma, Moinak Boral, Manjari Gupta	561
99	Pre-trained Word Embeddings for Malayalam Language: A Review Reji Rahmath K, P C Reghu Raj, Rafeeque P C	568
100	Fully Smart Fire Detection and Prevention in the Authorized Forests Venkata Ramana Karumanchi, S. Hrushikesava Raju, S. Kavitha , V. Lakshmi Lalitha, S. Vijaya Krishna	573
101	Survey Paper based Critical Reviews for Cosmetic Skin Diseases Shwetambari Borade, Dhananjay Kalbande	580
102	Eliminating the Web Noise by Text Categorization and Optimization Algorithm S. Ganeshmoorthy, R. Priya	586
103	Client-side Cryptography based Security for Cloud Computing System Md. Abu Musa, Md. Ashiq Mahmood	594
104	A Brief Study on Approaches for Extractive Summarization Kajal Jewani, Ojas Damankar, Nitesh Janyani, Disha Mhatre, Sahil Gangwani	601
105	Classification of COVID-19 cases using Fine-Tune Convolution Neural Network (FT-CNN) Sheshang Degadwala, Dhairya Vyas, Harsh Dave	609
106	Systematic Analysis of Movie Recommendation System through Sentiment Analysis R Lavanya, B. Bharathi	614
107	S.M.A.R.T. Technologies for Transport Tests Networks, Exploitation and Repair Tools Georgiy Baranov, Ievgen O. Zaitsev, Olena Komisarenko, Ilona Chernytska	621
108	CNN based Counterfeit Indian Currency Recognition using Generative Adversarial Network Shamika Desai, Atharva Rajadhyaksha, Anjali Shetty, Swapnil Gharat	626
109	A Deep Neural Network based efficient Software–Hardware Co-design Architecture for Sparsity Exploration S. John Pimo, Priyadarsini. K, Damaraju Sri Sai Satyanarayana, K. G. S. Venkatesan	632
110	Enhancement Techniques for Analysis of Satellite Images through ERDAS Software S. Sainis, V. Barahate, S. Bandawar, S. Tarak, Nita Nimbarte, Sanjay Balamwar	640
111	Performance Analysis of Parallel Programming Paradigms on CPU-GPU Clusters B N Chandrashekhar, H A Sanjay, Tulasi Srinivas	646

IQAC

Principal
NARASARAOPETA ENGINEERING COLLEGE
(AUTONOMOUS)
NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

112	Mtanh-Attention-BiLSTM model for Prediction of Automobile Export Customer Satisfaction K. Shyamala, C. S Padmasini	652
113	Text Based Hate-Speech Analysis Janak Sachdeva, Kushank Kumar Chaudhary, Harshit Madaan, Priyanka Meel	661
114	Recruitment System with Placement Prediction Suraj Gupta, Yuvraj Haryan, Atif Hingwala, Swapnil Gharat	669
115	Comparative Study of Boosting and Bagging based Methods for Fault Detection in a Chemical Process Rahul Shrivastava	674
116	An Efficient Framework for Iris Segmentation with Additional Pressure term in the Active Contour model and Classification S. Y. Pattar	680
117	An Autonomous Cleaning Robot Sri Vishva R, Naresh R, Venkada Krishnan M. S	686
118	Early Detection of Alzheimer's Disease using Ensemble of Pre-Trained Models Ambily Francis, Immanuel Alex Pandian	692
119	Traffic Light Cycle Control using Deep Reinforcement Technique Satya Prakash Sahu, Deepak Kr. Dewangan, Archit Agrawal, T. Sai Priyanka	697
120	Cyber Security in Digital Sector Akanksha verma, Pronika Chawla, Ragasree Surendra, Kritika Soni, B. Srikanth Reddy	703
121	Feature Selection and Prediction of Heart diseases using Gradient Boosting Algorithms Anuradha. P, Vasantha Kalyani David	711
122	A Transformers Approach to Detect Depression in Social Media Keshu Malviya, Bholanath Roy, Saritha SK	718
123	Big Social Data and Modelling Frameworks Inshita Bamba, Yashika, Jahanvi Singh, Pronika Chawla, Kritika Soni	724
124	Global Web based Shopping from the Customers and Merchants View B. Venkateswarlu, B. Revathi, Durga Bhavani Dasari, MVBT Santhi, Harika Lakshmi Sikhakolli	728
125	Jakarta Smart City Mobile Application for Problem Reporting Dejan Rivaldo Bongestu, Yappiter, Harco Leslie Hendric Spits Warnars	735
126	Mobile Application for the Futsal Sports Community in Jakarta Farel Darari Deksano, Dimas Raka Erfiandhi, Anggy Cahya Prasetya, Aditya Satria Nagara Patmuryanto, Harco Leslie Hendric Spits Warnars	741
127	Lesion Extraction of Endometriotic Images using Open Computer Vision Visalaxi.S, Dinah Punnoose, T. Sudalai Muthu	747
128	Hyperparameter Optimization of LSTM based Driver's Aggressive Behavior Prediction Model D. Deva Hema, K. Ashok Kumar	752
129	Study of Block Chain Technology in Empowering the SME Suneetha Merugula, Dinesh G, M. Kathiravan, Gourab Das, Praful Nandankar, Santoshachandra Rao Karanam	758
130	SSLA based Traffic Sign and Lane Detection for Autonomous Cars S Swetha, P. Sivakumar	766
131	Real-time Healthcare Monitoring using Smart Systems: A Step Towards Healthcare Service Orchestration Vaidik Bhatt, Samyadip Chakraborty	772

IQAC

Principal
NARASARAOPETA ENGINEERING COLLEGE
(AUTONOMOUS)
NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

132	A Novel Solar Power based Liquid Sprayer for Agricultural, Environmental and Health Care Applications P Rama Mohan	778
133	Real Time Solar Tracking System with GPS Neelam Verma, Manish Kumar, Shivam Sharma	783
134	An Efficient Squirrel Search Algorithm based Vector Quantization for Image Compression in Unmanned Aerial Vehicles M. S. Minu, R. Aroul Canessane	789
135	Image Quality Enhancement Algorithm based on Game Theory Model Erhui Xi, Songfeng Zhang	794
136	A Research Survey on State of the art Heart Disease Prediction Systems Lakshmi Prasad Koyi, Tejaswi.Borra, G. Lakshmi Vara Prasad	799
137	A Review: Condition based Techniques and Predictive Maintenance for Motor Aniket A. Manjare, Babasaheb G. Patil	807
138	Sentiment Analysis for Youtube Videos with user Comments : Review Rawan Fahad Alhujaili, Wael M.S. Yafooz	814
139	Model based Design for Automobiles by using Modeling and Optimization of Engine Cooling System E. Esakki Vigneswaran, S. Sujitha, R. Praveen	821
140	Optimal Solution of Economic Load Dispatch using Teaching Learning Algorithm Chodagam Srinivas, I Kranthi Kumar, A Senthilkumar, Y V Balarama Krishna Rao	828
141	Distinguishing Pneumonia and COVID-19: Utilizing Computer Vision to Mimic Clinician Efficacy Ishika Saha, Mahendra Kumar Gourisaria, Harshvardhan GM	834
142	Comparision of Diabetic Prediction AutoML Model with Customized Model Gururaj N Kulkarni, Sateesh Ambesange, Vijayalaxmi A, Anindita Sahoo	842
143	Staleness and Stagglers in Distibuted Deep Image Analytics Aswathy Ravikumar, Harini Sriraman	848
144	Image Fusion Algorithm for Medical images using DWT and SR Praveen kumar S, Sridevi S	853
145	Visual Question Answering using Data Mining Techniques for Skeletal Scintigraphy in medical domain – VQADMSS Jinesh Melvin Y I, Sushopti Gawade, Hemant Palivela	859
146	Effectiveness of Robotic Process Automation for Data Mining using UiPath Yashodhan Ketkar, Sushopti Gawade	864
147	Analysis of Brain Metastability in Healthy Elderly Population Avinash Shinde, Surya Das, Subha D. P	868
148	CNN Based COVID-19 Prevention System Deepalaxmi R Shenvi, Krishnananda Shet	873
149	Pre-Processing techniques of Text Mining using Computational Linguistics and Python Libraries Sakthi Vel S	879
150	Motor Imagery Classification based on Hybrid Feature Extraction and Deep Neural Network Rameshwar D. Chintamani, Parmalik Kumar, Rajneesh Karan	885
151	A Survey on Analysis of Fake News Detection Techniques Shailender Kumar, Subodh Kumar, Pooja Yadav, Meghna Bagri	894
152	A Study on Various Techniques for Plant Leaf Disease Detection using Image Leaf Sakshi Raina, Abhishek Gupta	900

IQAC

Principal
NARASARAOPETA ENGINEERING COLLEGE
(AUTONOMOUS)
NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

153	Design of Microwave Wideband Antenna for Brain Tumor Imaging Applications Balamurugan Velan, L. Jegan Antony Marcilin, I. Rexiline Sheeba, Sugadev Mani, Mani, Mary Sajin Sanju	906
154	Voice Navigation based guiding Device for Visually Impaired People P. Chitra, M. Sumathi, K. Srilatha, V. Balamurugan, N. Mathan, R. Narmadha	911
155	Secure Encrypted Data Transmission of Brainwaves using AES S. Yogalakshmi, E. Annadevi, Magthelin Therase, R. M. Joany	916
156	A Novel Approach of Human Hunger Detection Especially for Physically Challenged People S. Lakshmi, P. Kavipriya, M. R. Ebenezar Jebarani, T. Vino	921
157	Three-link Robotic Manipulator using the Data Acquisition System and Stereo Vision V. Vijayakumar, K. T. Ilayarajaa, T. Ravi, M. Sugadev, Suriya Prakash. P	928
158	A Survey on Visual Speech Recognition Approaches N. Radha, A. Shahina, A. Nayeemulla khan	934
159	Optimal DG Allocation Using Particle Swarm Optimization Prem Prakash	940
160	Hybrid Methods of Contourlet Transform and Particle Swarm Optimization for Multimodal Medical Image Fusion Mitesh Kumar, Nikhil Ranjan, Bharti Chourasia	945
161	Crop Yield Prediction using Remote Sensing and Meteorological Data Avnika Shah, Rhea Agarwal, B. Baranidharan	952
162	Street View Text Detection Methods : Review Paper Anuja Shinde, Manasi Patil	961
163	A Polyhouse: Plant Monitoring and Diseases Detection using CNN Radha N, Swathika R	966
164	An ASR System for Malayalam Short Stories using Deep Neural Network in KALDI Lekshmi K R, Elizabeth Sherly	972
165	Data Mining and Region Prediction based on Crime using Random Forest Dewan Mamun Raza, Debasish Bhattacharjee Victor	980
166	Guidance System for Visually Impaired People Kanchan Patil, Avinash Kharat, Pratik Chaudhary, Shrikant Bidgar, Rushikesh Gavhane	988
167	A Comparative Evaluation of Data Mining Techniques for Fault Classification in TCSC Lines using Multiclass Classification Approach Nishant H. Kothari, Bhavesh R. Bhalja, Vivek Pandya, Pushkar Tripathi	994
168	Design of Smart Cane with Integrated Camera Module for Visually Impaired People Lavanya Narayani. T, Sivapalanirajan. M, Keerthika. B, Ananthi. M, Arunarani M	999
169	A Secure Image Steganography using Improved LSB Technique and Vigenere Cipher Algorithm Lasya Voleti, Balajee R M, Siva Koteswararao Vallepu, Karthik Bayoju, Devireddy Srinivas	1005
170	A Survey based on PLL and its Synchronization Techniques for Interconnected System Mohan P. Thakre, Nishant P. Matale, Payal S. Borse	1011
171	Object Tracking and Counting in a Zone using YOLOv4, DeepSORT and TensorFlow Shailender Kumar, Vishal, Pranav Sharma, Nitin Pal	1017
172	Application of Pre-Trained Deep Convolutional Neural Networks for Rice Plant Disease Classification	1023

IQAC

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NARASARAOPETA ENGINEERING COLLEGE
(AUTONOMOUS)
NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

	Vimal K. Shrivastava, Monoj K. Pradhan, Mahesh P. Thakur	
173	Mandatory Enforcement of Geofenced Security in Android Prateek Pande, Amit Kumar Medatiya, Kurra Mallaiah, Rishi Kumar Gandhi, S Srinivasachary	1031
174	Infini – A Keyword Recognition Chatbot Mansi Dinesh Thakkar, Mitesh Nilesh Shah, Charmi Umesh Sanghavi, Nilakshi Jain	1036
175	Cuckoo Search Optimization for the Classification of Remote Sensing Image Processing Gandla Shivakanth, Prakash Singh Tanwar	1043
176	Breast Cancer Detection-based Feature Optimization using Firefly Algorithm and Ensemble Classifier Yogesh Suresh Deshmukh, Parmalik Kumar, Rajneesh Karan, Sandeep K. Singh	1048
177	Opportunistic Routing Protocols based on Fuzzy Logic: Present and Future Directions Salem Abbas, Khaleel Ahmad	1055
178	Brain Tumor Detection Analysis using CNN: A Review Sunil Kumar, Renu Dhir, Nisha Chaurasia	1061
179	A Detailed Review on Challenges and Imperatives of Various CNN Algorithms in Weed Detection Syamasudha Veeragandham, H Santhi	1068
180	Hybrid Classification Algorithms for Predicting Student Performance A. Dinesh Kumar, R. Pandi Selvam, V. Palanisamy	1074
181	Identification of Brain Tumors using Volume rendering Techniques K. Sudha Rani, K. Mani kumari, T. Nireekshna, D. V. Shobana, N. Kavitha, B. Bagya Sri	1080
182	Sparse Code based Indexing for Image Retrieval Saurabh Sharma, Vishal Gupta, Mamta Juneja	1088
183	Intelligent Electricity Information Collection based on 5G Technology Dan Liu, Donghong Fu, Qianru Liu, Chunxue Fan, Anxin Wang	1095
184	Intrusion Detection System using Optimal Support Vector Machine for Wireless Sensor Networks Sibi Amaran, R. Madhan Mohan	1100
185	Securely Distributing Files in Cloud Environment by Dispensing Asymmetric Key Management System Applying Hashing Nusrat Jahan, Md. Ashiq Mahmood	1105
186	Smart Fire Detection System in a Large Building using Lora WAN K. Gokulakrishnan, J. Manoj Kumar, A. Mohammed Ashim	1111
187	A Survey on Third Party Auditor in Cloud Computing K. Aruna Kumari, V. Naga Lakshmi	1116
188	A Novel 3D Object Watermarking Technique using Hash Key Cryptography Vinod Jain, Anuj Mangal	1122
189	Popularizing Antenna Synthesis with Our Solved Problem Sunitt Shantanu Digamber Fulari, Harbinder Singh	1127
190	An Efficient Approach for Multiple user Data Security in Cloud Computing Brozolal Mondol, Md. Ashiq Mahmood	1130
191	A Survey on Network Packet Inspection and ARP Poisoning using Wireshark and Ettercap Majidha Fathima K M, N. Santhiyakumari	1136
192	Implementation of Replay Attack in Controller Area Network Bus using Universal Verification Methodology	1142

IQAC

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NARASARAOPETA ENGINEERING COLLEGE
(AUTONOMOUS)
NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

	Thirumavalavasethurayar P, Ravi T	
193	Malicious URL Detection: A Comparative Study Shantanu, Janet B, Joshua Arul Kumar R	1147
194	Mobile Attendance based on Face Detection and Recognition using OpenVINO Dane Brown	1152
195	A Comprehensive Review on Detection of DDoS Attacks using ML in SDN Environment Shaveta Gupta, Dinesh Grover	1158
196	Phishing Website Detection using Novel Machine Learning Fusion Approach A. Lakshmanarao, P. Surya Prabhakara Rao, M M Bala Krishna	1164
197	Review on Application Layer Protocol for IoT enabled Agricultural Intrusion Detection Jerrin Simla A, Rekha Chakravarthy	1170
198	Speech Emotion Recognition using Convolution Neural Networks Krishna Chauhan, Kamalesh Kumar Sharma, Tarun Varma	1176
199	Real-Time Drowsiness Identification based on Eye State Analysis Nageshwar Nath Pandey, Naresh Babu Muppalaneni	1182
200	Design of Semi Circular Floral Shape Directive UWB Antenna for Radar based Microwave Imaging Asheesh Gupta, M. L. Meena	1188
201	Intrusion Detection System - Deep Learning Perspective Shivani Desai, Bhavyang Dave, Tarjni Vyas, Anuja R. Nair	1193
202	Detection of Zero-Day Attacks in Network IDS through High Performance Soft Computing Srinivas Mishra, Sateesh Kumar Pradhan, Subhendu Kumar Rath	1199
203	Privacy Preserving Data Deduplication in Cloud using Advanced Encryption Standard B. Tirapathi Reddy, Maddireddy Vaishnavi, Makireddy Lalitha, Papineni Poojitha, Vakalapudi Bhavya Sri Kanthi	1205
204	Review of Shortest Path Wireless Sensor Network Performance with Energy-Efficient Approaches Amit Sahu, Nishi Pandey, Abhishek Agwekar	1211
205	Development of Secure Integrated Water ATM as a Smart System Prateek Singh, Mukesh Kumar Lohani, Riya Nagarkoti, Swapnendu Chakrabarti, P B Karandikar	1216
206	Car Parking Allocation System using Arduino P, Dhanabalraj, J. Jashva Sherin, L. Gopinath, K. Kumar, G. M. Gowthaman	1223
207	Foreign Language Online Guiding based on Computer Network Ecological Environment and Data Mining Bo Wang	1228
208	Phenomenon of Machine Mother Tongue Culture Transfer in English under the Internet with Pattern Recognition Models Junhui Shi	1232
209	Multi-node Trust Model Construction based on Blockchain: Modelling and Simulation Hao Luo	1236
210	The Proposed Novel Sphere Decoder for Mimo Detection R V Durga, A McLauchlin	1240
211	Analysis of Walsh-Hadamard Transformation with CFBMC Communication Dharmavaram Asha Devi, Manda Akshitha, Yeshala Siri Chandana	1246

IQAC

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NARASARAOPETA ENGINEERING COLLEGE
(AUTONOMOUS)
NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

212	Secured SMS Transmission using Android App M. R. Ebenezar Jebarani, P. Kavipriya, S. Lakshmi, T. Vino	1253
213	A Reliable Significant Message based Ranking Algorithm for Online Social Networks S. R. Mugunthan	1257
214	High Accuracy of Hybrid IDS System using Evidence Theory and SVM ML Technique Sonam Raj, Kedar Nath Singh, Neetesh Kumar Gupta, Rajesh Nigam, Bhupendra Verma, Surabhi Karsoliya	1261
215	Optimized Genetic Algorithm for Efficient Allocation of Virtualized Resource in Cloud (OGA_EAVRC) K Jairam Naik	1265
216	Heart Pulse Monitoring and Notification System using Arduino Hari Kiran Pendurthi, Jaswanth Godavarthi, Hemanth Sai Gokarakonda, Siva Sai Kanneganti, S. Kavitha	1271
217	Stabilization of Flight Controller for Unmanned Aerial Vehicle Yogita Dubey, Prathamesh Upadhye, Mrunal Shinde, Himanshu Hulke, Rizwan Sheikh, Disha Suneja	1279
218	WIFI Enabled Smart Industrial Security System K. Kalai Selvi, Ragul.K, Priyadarshini. M, Lakshmipriya. A, Monika Swetha. G	1284
219	Blockchain based Solution to Improve the Supply Chain Management in Indian Agriculture V. Sudha, P. Shanmughasundaram, R. Kalaiselvi	1289
220	Recent Developments and Methods of Cloud Data Security in Post-Quantum Perspective Shaik Mohammed Ilias, V. Ceronmani Sharmila	1293
221	A Review of Digital signature and Hash Function based Approach for Secure Routing in VANET Surender Kumar, Dr. Vikram Singh	1301
222	Direction based Node Placement in Wireless Sensor Network Kirankumar Y. Bendigeri, Jayashree D. Mallapur, S. B. Kumbalavati	1306
223	Securing Drone-based Ad Hoc Network using Blockchain Vijay A. Kanade	1314
224	Virtual Machine Security Problems and Countermeasures for Improving Quality of Service in Cloud Computing S Mahipal, V. Ceronmani Sharmila	1319
225	Blockchain Technology in Agriculture Product Supply Chain Shivendra, Kasa Chiranjeevi, Mukesh Kumar Tripathi, Dhananjay D. Maktedar	1325
226	A Novel Privacy Preserving Biometric Authentication Scheme using Polynomial Time Key Algorithm in Cloud Computing Praveen Tumuluru, CH. M. H. Saibaba, B. Revathi, Durga BhavaniDasari, Lakshmi Ramani Burra, B.Venkateswarlu	1330
227	Garbage Zero (Garb0): An IoT Framework for Effective Garbage Management in Smart Cities Sagar Chavan, Umesh Patil, Santosh Sam Koshy, S. V. Srikanth	1336
228	Construction Method of "Multi-Station Integration" Operation System based on Ubiquitous Power Internet of Things Jin Li, Zhengwen Zhang, Hua Cai, Lingyu Zhang, Xindong Huang, Shujuan Sun	1343
229	Design of the Intelligent Elderly Lighting Emotional Interactive Experience System based on Internet of Things	1347

IQAC

Principal
NARASARAOPETA ENGINEERING COLLEGE
(AUTONOMOUS)
NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

	Jing Wang	
230	A review on the Internet of Things and Big Data Analytics based on Smart Cities John W. Kasubi, Manjaiah D.H, Guesh Dagnew Demewez	1352
231	The Recent Trends in Biometric Traits Authentication based on Internet of Things (IoT) Belal M. Alsellami, Prapti D. Deshmukh	1359
232	Lightweight Security in IoT: A Survey Dileep Kumar M J, Prabha Niranjan	1366
233	An Internet of Things Paradigm: Pandemic Management (incl. COVID-19) Vishnu S, S. R. Jino Ramson	1371
234	Blockchain and Internet of Things: Applications and Practices Premkumar R, Sathya Priya S	1376
235	Security Issues and Architecture of IoT Kushagra Jha, Pronika, Sitara Anumotu, Kritika Soni	1381
236	Smart Fire Detection and Surveillance System using IoT Nikhil Komalapati, Varun Chowdary Yarra, Lakshmi Anantha Vyas Kancharla, T. N. Shankar	1386
237	A Study on Comprehensive Risk Level Analysis of IoT Attacks Raenu Kolandaisamy, Kasthuri Subaramaniam, Abdurrahman Bin Jalil	1391
238	Customized Smart Object Detection: Statistics of Detected Objects using IoT V. Lakshmi Lalitha, S. Hrushikesava Raju, Vijaya Krishna Sonti, V. Murali Mohan	1397
239	IoT based Digital Toll Collection System: A Perspective Md. Nazmul Hossain Mir, N. M. Imrul Kayesh, Tanzila Mahmud Khan, Abdus Sattar	1406
240	Gas Leakage with Auto Ventilation and Smart Management System using IoT Afsana Mim Anika, Jannatul Ferdous Shoma, Nasrin Akter, Md. Niamul Hasan, Abdus Sattar	1411
241	Smart Embedded Framework using Arduino and IoT for Real-Time Noise and Air Pollution Monitoring and Alert System Janeera. D. A, Poovizhi.H, Sheik Haseena. S. S, Nivetha. S	1416
242	IoT and AI driven Sustainable Practices in Airlines as Enabler of Passenger Confidence, Satisfaction and Positive WOM Samyadip Chakraborty, Tulika Chakravorty, Vaidik Bhatt	1421
243	Augmented Reality with Internet of Things Sureshkumar S, Agash C P, Ramya S, Kaviyaraj R, Elanchezhiyan S	1426
244	Design of IoT based Multifunctional Camouflage Military Robot P. Kavipriya, G. Jegan, Edara Venkat, Deevi Nikhil Ranganadh	1431
245	Fast Restoration of Network with Remote Electric Tilt (RET) using IoT T. Ravi, M. Sugadev, S. Karthikeyan, V. Vijayakumar, Krishna Vibhavasu, Challa Ashok	1436
246	IoT based Prediction of Water Quality Index for Farm Irrigation Rajesh Kumar Yadav, Adarsh Jha, Aditya Choudhary	1443
247	Smart Health Care Monitoring System based on Internet of Things (IoT) V. Baby Shalini	1449
248	Narrowband IoT (NBIoT) Assisted Smart Grids Sudhir K. Routray, Devarajan Gopal, Abhishek Javali, Anindita Sahoo	1454
249	Narrowband IoT based Support Functions in Smart Cities Sudhir K. Routray, Laxmi Sharma, Eisha Akanskha, Aritri D. Ghosh, Sharmila. K. P, Pappa M	1459

IQAC

Principal
NARASARAOPETA ENGINEERING
(AUTONOMOUS)
NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

250	Implementation of Approximate Computing Circuits for Error Tolerant Image Processing Applications Sakshi Jain, Ritu Singh	1465
251	Efficient Deblocking Filter with SRAM using 22nm FinFET Technology Ritu Singh, Sakshi Jain	1470
252	Performance of Induction Motor with Hybrid Multi Level Inverter for Electric vehicles B. N. Ch. V. Chakravarthi, S. Pragaspathy, P. Naveen, V S N Narasimha Raju	1474
253	VLSI Architecture for High Tap IF Filter with Low Complexity using Multi-rate Approach Simra Haider, Vibha Tiwari	1479
254	Power Quality Improvement for a Hybrid Renewable Farm using UPQC Ch. Phani Kumar, V. Karthikeyan, S. Pragaspathy, K. N. S. Durga Prakash	1483
255	Hotel Review Analysis for the Prediction of Business using Deep Learning Approach Md. Sagar Hossen, Anik Hasan Jony, Tasfia Tabassum, Md. Tanvir Islam, Md Mahfujur Rahman, Tania Khatun	1489
256	Low Cost Multipurpose UV-C Sterilizer box for Protection Against COVID'19 Rahul Santhosh, Sudha Yadav	1495
257	Hybridized Symmetrical Multilevel Inverter Topology with Reduced Number of Switches and DC Sources Lipika Nanda, Srikanta Mohapatra, Arjyadhara Pradhan, Soubhagya Ranjan Prusty	1499
258	Smart Door System with COVID-19 Risk Factor Evaluation, Contactless Data Acquisition and Sanitization Akshay Duth, Abhinav A Nambiar, Chintha Bhanu Teja, Sudha Yadav	1504
259	An Intuitive Alert System for Fault Detection and Fuse Burn out Recognition at the Distribution Transformer A. Jagadeesh, B. Sunil, R. Mahalakshmi	1512
260	Short-Term Load Forecasting using Time Series Algorithm Subhra Debdas, Shivangi Mohanty, Sarbani Mohanty, Biswarup Biswas, Sayantan Kundu, Anik Pal	1518
261	A Comprehensive Survey on Communication Technologies for a Grid Connected Microgrid System Suman Ghosh, Chandan Kr. Chanda, J. K. Das	1525
262	Hybrid Topology of Graph Convolution and Autoencoder Deep Network For Multiple Sclerosis Lesion Segmentation Abhilasha Joshi, K.K. Sharma	1529
263	Content based Image Retrieval using Frequency Domain Features: Zigzag Scanning of DCT Coefficients Netalkar Rohan Kishor, Hillol Barman, U. S. N.Raju, Suresh Kumar Kanaparthi, Harika Ala	1535
264	Implementation of CMOS-based Photo Diode for High-Efficiency end-to-end Communication and Enhanced Bit Error Rate Praful Nandankar, A. Geetha Devi, A. Jaya Lakshmi, V. V. Hari Babu	1541
265	Next-Day Electricity Demand Forecasting using Regression Mert Çetinkaya, Tankut Acarman	1549
266	Automatic Solar Panel Cleaning System based on Arduino for Dust Removal Md. Rawshan Habib , Md Shahnewaz Tanvir, Ahmed Yousuf Suhan, Abhishek Vadher, Sanim Alam, Tahsina Tashrif Shawmee, Koushik Ahmed, Abdelrhman Alrashed	1555

IQAC

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NARASARAOPETA ENGINEERING COLLEGE
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NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

267	Comparative Study of THD in Multilevel Converter using Model Predictive Controller S. Rajasekaran, CH. Mahendar	1559
268	Mathematical Modelling of DVR with Two Stage Feedback Controller Janagama Vinay Kumar, P. Chaitanya Theja, P. S. V. N. Sudhakar, V S Aditya, P Rama Krishna, Rushi Santhosh Singh Thakur	1564
269	Design and Implementation of Efficient Torque Control of Induction Motor for Electric Vehicles T. Rampradesh, S. Harini, C. Christober Asir Rajan	1571
270	Towards Effective Time Series Classification of Multi-Class Imbalanced Learning Priyadarsini .K, S. Karthik, O. Hemakesavulu, Santoshachandra Rao Karanam	1576
271	Performance Analysis of Mantissa Multiplier and Dadda Tree Multiplier and Implementing With DSP Architecture G. Ramachandran, K. Kishore, Chandra Kumar Dixit, A. Arunraja	1583
272	An Investigation on Power Factor Enchancement using Bi-Directional Power Converter R. Sanjai Rohan Singh, J. Ramesh Kumar, T. Ram Mohan, M. Vel Manikandan, M. Gengaraj, L. Kalaivani	1588
273	Total Variation Denoising Techniques for Artifact Removal from EEG Signals Ahsan Ali, Subha D. P	1594
274	COVID19 Prediction using Time Series Analysis Aayush Jain, Himanshu Gadia, Tanay Sukhdeve, Satya Prakash Sahu, Satya Verma	1599
275	FFT and PMU based Fault Analysis in Double Circuit Transmission Line Suman Ghosh, Barnali Kundu, Avinash Shaw, Chandan Kr. Chanda, Aveek Chattopadhyaya, J. K. Das	1607
276	Comparative Analysis of Two- Level & Three-Level SVPWM based DTC IM Drives Ashish Srivastava, Anurag Chauhan, Anurag Tripathi	1612
277	Electronic Solution to Address Traffic Issues Near Bus Stops Utkarsh Mishra, Rain Ritika, Rajeshwar, Ashish Kumar Mishra, P B Karandikar	1619
278	Comparative Analysis of Modified INC and FLC for Solar Charger for Electric Two Wheeler Pooja Unnikrishnan, Visal Raveendran, Manjula G Nair	1625
279	A Brain-Switch based on Change in SSVEP Magnitude Kamal Sharma, Vaidik Gupta	1632
280	Review on Powering an Automated Teller Machine using Vertical Axis Wind Turbine and Solar Energy S. Karthikeyan, P. Krishna Prakash, K. Logesh Krishna, V. Poovarasan	1637
281	Analysis of High Speed Hybrid Full Adder V. Vijayakumar, K. T. Ilayarajaa, T. Ravi, M. Sugadev	1641
282	Booth Multiplier Design using Modified Square Root Carry-Select-Adder P. Kavipriya, S. Lakshmi, T. Vino, M. R. Ebenezar Jebarani, G. Jegan	1647
283	Intelligent Vehicle Tracking System for Motorcycle Racing Competition Chetan S.Gode, Vikas R.Gupta	1654
284	Design of all-optical D flipflop using SOA-MZI Architecture Sukhender, Nivedita Nair, Sanmukh Kaur, Purshottam Mittal	1657
285	Efficient Solar PV Array System using Modified Algorithm for Water Pumping System Rameshwari Medhane, Sharad Dhamal, Mohan Thakre	1663

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286	Estimation of Health and Initial SOC based on Voltage Variation for LiPo Battery M. Nirmala, Durga Shree S	1670
287	Smart Energy Meter for Electric Vehicle M. Padmapriya, T. A. Raghavendiran, S. Gomathi	1677
288	Real-time Emergency Reporting and Handling System Thosani Yash Bhavesh, Panchal Rutvik Rajendra, Nagda Preet Kirti, Nilakshi Jain	1683
289	Evolutionary Computing based Analysis of Diversity in Grammatical Evolution Ayman Youssef, Krishn Kumar Gupt, Muhammad Adil Raja, Aidan Murphy, Conor Ryan	1688
290	Image Processing based Smart Weed Removal and Organic Fertilizer Sprinkling Bot – A Systematic Review Rajyalakshmi Uppada, Vanaja Kandubothula, Uppalapati Padma	1694
291	Role of Wearables in Sports based on Activity Recognition and Biometric Parameters: A Survey N. Nithya, G. Nallavan	1700
292	Arduino based Smart System for Control and Effective Billing P. Swamy Vivek, P. Venkata Sai Rahul, Dyuthy E. S, Sudha Yadav	1706
293	An Introduction to Universal Verification Methodology for the Digital Design of Integrated circuits (IC's): A Review N B Harshitha, Praveen Kumar Y G, M Z Kurian	1710
294	Machine Learning based Click Bait Detection System Ritu Agarwal, Dhruv Jain, Janardan Tiwari, Gagan Sharma	1714
295	Machine Learning based Collaborative Intelligent Closing Gap between Graduates and Labour Market Framework Wael M.S. Yafooz, Essa Abdullah Hezzam, Abdel-Hamid Mohamed Emara	1721
296	Blockchain driven IoT based Delish2Go Decentralized Food Delivery Application K. Sasikala Rani, S. Vishali	1727
297	Natural Language Processing based Identification of Related Short Forum Posts through Knowledge based Conceptualization J. C. Miraclin Joyce Pamila, Ajithkumar. A. K, R. Senthamil Selvi	1733
298	Global Positioning System based Waypoint Capture for Dual-Layered Security Sushitha S, Raghavendra Naik L	1741
299	Predictive Models for River Water Quality using Machine Learning and Big Data Techniques - A Survey Jitha P Nair, Vijaya M S	1747
300	Security Analysis on an Efficient and Provably Secure Authenticated Key Agreement Protocol for Fog-Based Vehicular Ad-Hoc Networks Salman Shamshad, Mohammad S. Obaidat, Minahil, Muhammad Asad Saleem, Usman Shamshad, Khalid Mahmood	1754
301	On the Security of Authenticated Key Agreement Scheme for Fog-driven IoT Healthcare System Salman Shamshad, Mohammad S. Obaidat, Minahil, Usman Shamshad, Sahar Noor, Khalid Mahmood	1760
302	On the Security of a Lightweight Privacy-Preserving Authentication Protocol for VANETs Salman Shamshad, Muhammad Asad Saleem, Mohammad S. Obaidat, Usman Shamshad, Khalid Mahmood	1766
303	A Review on Various Techniques for Spam Detection Nitesh J. Kawale, Saad Yunus Sait	1771

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Deep Learning for Lung Cancer Prediction using NSCLS patients CT Information

Naresh Cherukuri
Assistant Professor, Department Of CSE,Koneru Lakshmaiah Educational Foundation.Vaddeswaram,India-522502
https://orcid.org/0000-0003-0950-5497

Naga Raju Bethapudi
Assistant Professor, Department Of CSE,CMR Technical campus
Hyderabad,India-500004
nagaraju.b6@gmail.com

Dr.Venkata Sai Krishna Thotakura
Professor, Department Of CSE
Narsaraopet Engineering College
Narsaraopet,India-522601
dr.saikrishna007@gmail.com

Prasad Chitturi
Assistant Professor, Department Of CSE,Koneru Lakshmaiah EducationalFoundation
Vaddeswaram,India-522502
chprasad4u@gmail.com

CMAK Zeelan Basha
Assistant Professor, Department Of CSE,Koneru Lakshmaiah
Vaddeswaram,India-522502
cmak.zeelan@gmail.com

Dr.Raja Mani Mummidi
Assistant Professor, Department Of CSE,Gitam Institute Of Technology
Vishakapatnam,India-530045
rmummidi@gitam.edu

Abstract— Many kinds of diseases are there which affects human health and one among them is Lung cancer which is a deadly affecting disease and should be treated in its early stage and failing which may cause the death of an individual. Lung CancerNSCLC (Non-Small Cell Lung Cancer) patients much of the time show changing clinical classes and results, even inside a comparative tumour step. The examination investigates deep learning exercises in clinical tomography considering the mechanized assessment of radiographic ascribes and perhaps upgrading understanding outline. Our results give verification that profound learning frameworks may be used for the passing rate hazard definition subject to mind detail CT portrayals from NSCLC patients. This verification rouses up and coming assessment into unrivaled unwinding the clinical and common reason of profound learning frameworks similarly as endorsement in inescapable data.

Keywords— Radiomic, CT (calculated Tomography), Tumor NSCLC patients, Surgery patients. Three Dimensional CONVOLUTION NN

I. INTRODUCTION

Tumors were physically molded and affirmed by a qualified professional-reader. With the slice-texture surpassing aerial navigation goals, all the data group were re-sampled into homogeneous pixel of unit measurement to make sure likeness, in which 1 pixel relates to 1 mm^3. Result has been found by applying direct and closest neighbor interruptions for the picture and comments, correspondingly. If various annotations which are disconnected already found, larger volume has been considered for the study.

A. Background

Offered full three-dimensional tumor division, both the jumping box and Centre of mass (CoM) of the tumor explanations were determined. Three dimensional homogeneous stripes of magnitude 50 × 50 × 50 were separated across every CoM, catching over 60 percentage of the tumor jumping boxes' measurements in the radiotherapeutics training information set. The stripes have been stabilized later to a 1-0 series utilizing upper and lower Hounsfield unit limits of 3,072 and −1,023 correspondingly. An expansion factor of 32,000 was implied to the stripes, generating a size for training of nearly 5.89 and 9.39 million information tests for the surgery and radiotherapy information sets, separately. The above-mentioned extensions consist of random interpretations ±10 pixel resolution in each of the 3 axes, arbitrary revolution at 90° interims along the transverse axis only, and arbitrary spinning along every one of the 3 axes. A magnitude was done progressively throughout the professional development. No adjustment-or assessment-time reinforcement has been implemented.

II. PURPOSE

In this study, a three dimensional CONVOLUTION NN engineering was utilized. The system contains a sum of a four three dimensional convolutional layers of 63, 928, 894, and 509 channels with portion series of 3 × 3 × 3, 3 × 3 × 3, 3 × 3 × 3, 5 × 5 × 5 , and separately. Two maximal pooling strata of part series 3 × 3 × 3 have been implemented following the 2nd and 4th convolutional strata. A progression of four completely joined strata—with 13,824, 513, 039, and two units—if significant level thinking prior to the forecast possibilities were determined in the finishing layer of SoftMax categorizer. Training description is as below: We applied the inclination based upon the probability associated with the optimization tool Adam [5] with a worldwide finding rate of 1×10^{-03} with no rot, a bunch size of 16, dropping out [6] of 25 percentage and half on the intricacy and completely associated levels, individually, and a L2 normalization [7] penalizing chance of 1×10^{-05}. To evade the inward covariance, move issue [8], bunch standardization has been implemented over all levels, with the information layer as an exemption. Flawed redressed straight units (defective ReLUs) [9] with alpha = 0.1 were the initiation capacity of decision over the whole system before the last softmax enactment. During a training session the CONVOLUTION NN within the therapeutic radiology information set, we utilized a randomized lattice search investigating diverse hyper-factors involving convolution part size, regularization term, learning rate, batch size, and input patch size. Concerning the overall architecture, we began with a thin system, in which the underfitting happens, and steadily included levels. The model was streamlined on

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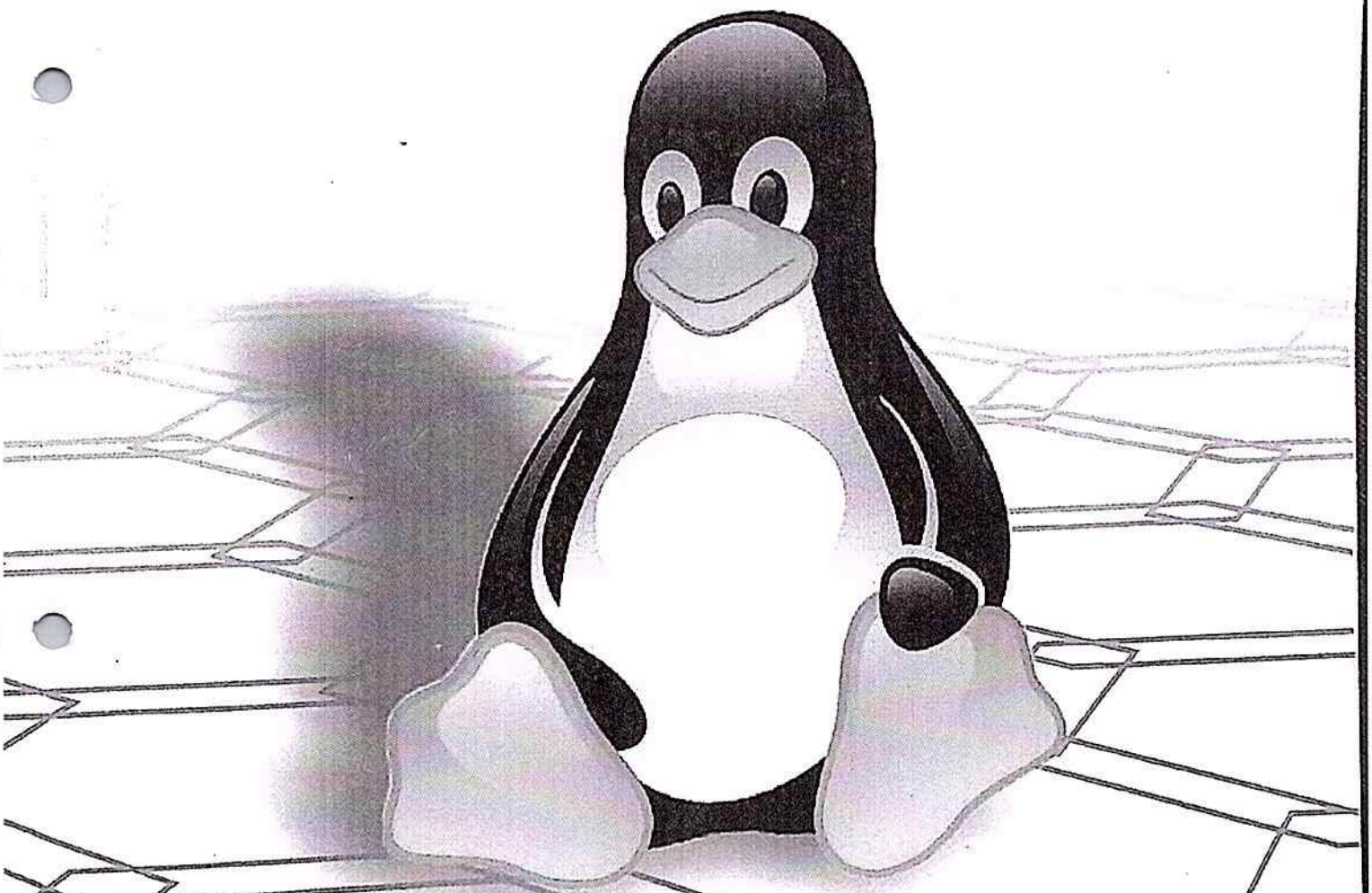

Dr. K. Lakshminadh
Mr. K. Gnanendra

Dr. S. N. Thirumala Rao
Mr. B. Siva Kanaka Raju

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Authors

Dr. K. Lakshminadh
Professor
Department of Computer Science & Engineering
Narasaraopeta Engineering College(Autonomous)
Narasaraopet, Guntur, A.P. - 522 601

Dr. S. N. Thirumala Rao
Professor
Department of Computer Science & Engineering
Narasaraopeta Engineering College(Autonomous)
Narasaraopet, Guntur, A.P. - 522 601

Mr. K. Gnanendra
Associate Professor
Department of Computer Science & Engineering
Narasaraopeta Engineering College(Autonomous)
Narasaraopet, Guntur, A.P. - 522 601

Mr. B. Siva Kanaka Raju
Assistant Professor
Department of Computer Science & Engineering
Narasaraopeta Engineering College(Autonomous)
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P.No:+91 40 23710657, 238000657 Fax: +91 40 23810657

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Chapter-1: Introduction

1.0	Objectives	2
1.1	Open Source Technology	2
1.1.1	Open Source Criteria	2
1.2	Introduction to Linux	3
1.2.1	Brief History	4
1.3	Linux Features	4
1.4	Pros and Cons of Linux	6
1.4.1	Linux Pros	6
1.4.2	Linux Cons	7
1.5	Linux Flavors	7
1.5.1	Linux and GNU	7
1.5.2	GNU / LINUX	8
1.5.3	Which Distribution should we Install	8
1.6	Logging in, Activating the user Interface and Logging out	9
1.6.1	Graphical Mode	9
1.6.2	Text Mode	11
1.7	Linux Components	11
1.8	Commands in Unix	12
1.9	Some Basic Commands	14
1.10	Disk Related Commands	37
1.11	Process Related Commands	39
1.12	Command Substitution	42
1.13	Giving Multiple Commands	43
1.14	Outcomes	44
1.15	Review Questions	44
1.16	Multiple Choice Questions	45

Chapter-2: The File System

2.0	Objectives	48
2.1	Introduction	48
2.2	The Linux File System	48
2.2.1	Files	48
2.2.2	Sorts of Files	49

IQAC

Principal
NARASARAOPETA ENGINEERING COLLEGE
(AUTONOMOUS)
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2.2.3	Basics of a File	49
2.3	File Handling Utilities	50
2.4	File System Layout	51
2.4.1	Directory Hierarchy	51
2.4.2	The File System in Reality	54
2.5	The most Important Files and Directorifs	54
2.5.1	The Kernel	54
2.5.2	The Shell	55
2.5.3	Your Home Directory	55
2.6	File Types	56
2.7	File Attributes and Permissions	57
2.7.1	File Permissions	58
2.7.2	Directory Permissions	59
2.7.3	Checking Permissions	60
2.7.4	Changing File Permission	61
2.8	The chmod command	62
2.8.1	Relative Permissions	63
2.8.2	Absolute Assignment of Permissions	64
2.9	Masking File Permissions	65
2.10	Changing Ownership and Group	66
2.10.1	Change Ownership (chown) Command	66
2.10.2	Change Group (chgrp) Command	67
2.11	file command	67
2.12	Outcomes	68
2.13	Review Questions	69
2.14	Multiple Choice Questions	69

Chapter-3: Using the Shell

3.0	Objectives	72
3.1	Introduction to the Shell	72
3.2	Definition and Function of Shell	72
3.3	Purpose of Shell	73
3.4	Types of Shell	73
3.5	Characteristics and Responsibilities of Shell	75
3.5.1	The Linux Shells	76
3.6	The Command Line	77
3.6.1	Command Line Editing	77
3.6.2	Command and Filename Completion	78

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3.7 Metacharacters 79
3.8 Filename Substitution Metacharacters 79
3.8.1 Using the * Wildcard 80
3.8.2 Using the ? Wildcard 83
3.8.3 Matching a Range of Characters 84
3.8.4 Negating a Set with Meta Charater [!...] 85
3.8.5 Matching Shell Symbols 86
3.8.6 Generating Patterns 86
3.9 Input/Output Redirection 87
3.9.1 Redirecting Output 87
3.9.2 Redirecting Input 90
3.9.3 Pipes 91
3.10 Process Execution 93
3.11 Quoting Metacharacters 95
3.11.1 Backslash 96
3.11.2 Double Quotes 97
3.11.3 Single Quotes 97
3.12 Positional Parameters And Special Parameters 98
3.13 Creating New Commands 100
3.14 Outcomes 103
3.15 Review Questions 103
3.16 Multiple Choice Questions 103

Chapter-4: Filters

4.0 Objectives 106
4.1 Introduction 106
4.2 Filters 106
4.3 The grep Family 106
4.3.1 Specifying Pattern 107
4.3.2 Regular Expressions 108
4.3.3 The grep Family - Differences 114
4.4 Other Filters 121
4.5 The Stream Editor (Sed) 136
4.5.1 sed Script 138
4.5.2 sed Addresses 139
4.5.3 sed Commands 141

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(AUTONOMOUS)
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Guntur (Dist.), A.P.

4.5.4 Input / Output Commands in sed Utility 149

4.6 The awk Pattern Scanning and Processing Language 153

4.6.1 Features of awk 154

4.6.2 Fields and Records in awk 155

4.6.3 Different Variables Available in awk 156

4.6.4 awk Script 157

4.6.5 Output Statements 159

4.6.6 Different Patterns available in awk 162

4.6.7 Operators used in awk Shell Script 164

4.6.8 Action in awk 167

4.6.9 awk Control Structures 168

4.6.10 Control Actions in awk 173

4.6.11 Functions 175

4.7 Outcomes 178

4.8 Review Questions 178

4.9 Multiple Choice Questions 179

Chapter-5: Shell Programming

5.0 Objectives 182

5.1 Introduction 182

5.2 Shell Variables 182

5.2.1 User Defined Variables 183

5.2.2 System Variables 186

5.2.3 Local Variables 187

5.2.4 Export Command 188

5.3 The first shell script 189

5.3.1 Features of Shell Script 189

5.3.2 Creating and Running a Script 189

5.3.3 Executing the Script 190

5.4 The read command 191

5.5 The &? Variable knowing the exit Status 192

5.6 More About the set Command 193

5.7 The exit Command 194

5.8 Control Structures 195

5.8.1 Branching Control Structures 195

5.8.2 Test Command 199

5.8.3 Loop Control Structures 204

5.9 The expr Command 209

5.10 Debugging Scripts 212

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5.11 The script Command 213
5.12 The eval Command 214
5.13 The exec Command 214
5.14 Several shell programs 215
5.15 Outcomes 223
5.16 Review Questions 223
5.17 Multiple Choice Questions 224

Chapter-6: Process

6.0 Objectives 226
6.1 Introduction to Process 226
6.2 Process structure 226
6.2.1 Process Identification 226
6.2.2 Processor State Information 226
6.2.3 Process Control Information 227
6.3 Process Identification & User Identification 228
6.4 Background process 228
6.5 system 229
6.6 exit() 230
6.7 wait() 232
6.8 waitpid( ) 233
6.9 Parent and Child 235
6.10 Fork() 236
6.11 File Sharing 237
6.12 Orphan Process 241
6.13 Zombies 242
6.14 vfork() function 243
6.15 exec function 245
6.16 The execv() Function 247
6.17 The execvp() Function 248
6.18 System calls Library Functions 251
6.18.1 System Calls 251
6.18.2 Library Function 252
6.19 System Function 253
6.20 Outcomes 253
6.21 Review Questions 253
6.22 Multiple Choice Questions 254

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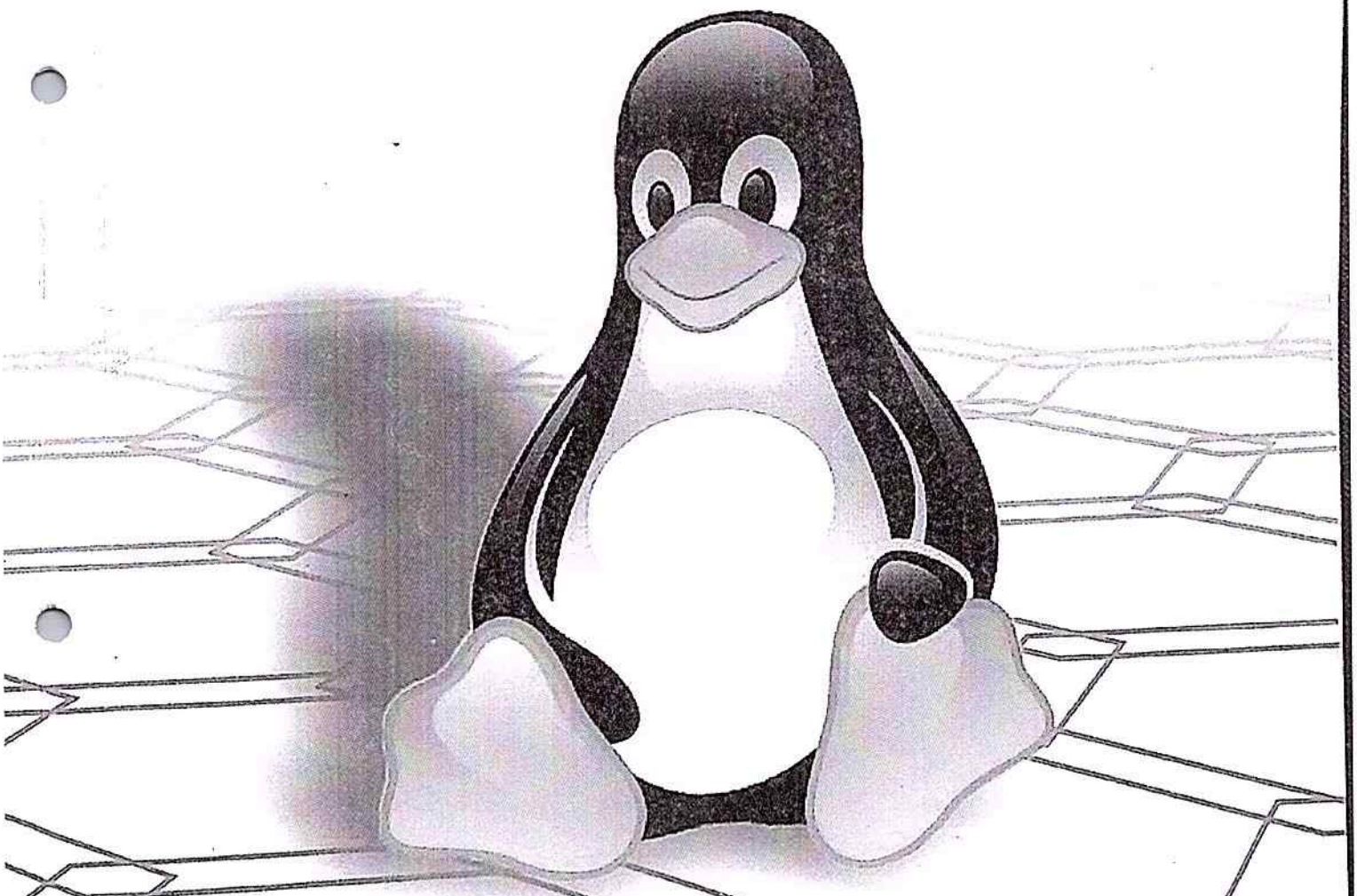

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Authors

Dr. K. Lakshminadh
Professor
Department of Computer Science & Engineering
Narasaraopeta Engineering College(Autonomous)
Narasaraopet, Guntur, A.P. - 522 601

Dr. S. N. Thirumala Rao
Professor
Department of Computer Science & Engineering
Narasaraopeta Engineering College(Autonomous)
Narasaraopet, Guntur, A.P. - 522 601

Mr. K. Gnanendra
Associate Professor
Department of Computer Science & Engineering
Narasaraopeta Engineering College(Autonomous)
Narasaraopet, Guntur, A.P. - 522 601

Mr. B. Siva Kanaka Raju
Assistant Professor
Department of Computer Science & Engineering
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Chapter-1: Introduction

1.0	Objectives	2
1.1	Open Source Technology	2
1.1.1	Open Source Criteria	2
1.2	Introduction to Linux	3
1.2.1	Brief History	4
1.3	Linux Features	4
1.4	Pros and Cons of Linux	6
1.4.1	Linux Pros	6
1.4.2	Linux Cons	7
1.5	Linux Flavors	7
1.5.1	Linux and GNU	7
1.5.2	GNU / LINUX	8
1.5.3	Which Distribution should we Install	8
1.6	Logging in, Activating the user Interface and Logging out	9
1.6.1	Graphical Mode	9
1.6.2	Text Mode	11
1.7	Linux Components	11
1.8	Commands in Unix	12
1.9	Some Basic Commands	14
1.10	Disk Related Commands	37
1.11	Process Related Commands	39
1.12	Command Substitution	42
1.13	Giving Multiple Commands	43
1.14	Outcomes	44
1.15	Review Questions	44
1.16	Multiple Choice Questions	45

Chapter-2: The File System

2.0	Objectives	48
2.1	Introduction	48
2.2	The Linux File System	48
2.2.1	Files	48
2.2.2	Sorts of Files	49

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2.2.3	Basics of a File	49
2.3	File Handling Utilities	50
2.4	File System Layout	51
2.4.1	Directory Hierarchy	51
2.4.2	The File System in Reality	54
2.5	The most Important Files and Directorifs	54
2.5.1	The Kernel	54
2.5.2	The Shell	55
2.5.3	Your Home Directory	55
2.6	File Types	56
2.7	File Attributes and Permissions	57
2.7.1	File Permissions	58
2.7.2	Directory Permissions	59
2.7.3	Checking Permissions	60
2.7.4	Changing File Permission	61
2.8	The chmod command	62
2.8.1	Relative Permissions	63
2.8.2	Absolute Assignment of Permissions	64
2.9	Masking File Permissions	65
2.10	Changing Ownership and Group	66
2.10.1	Change Ownership (chown) Command	66
2.10.2	Change Group (chgrp) Command	67
2.11	file command	67
2.12	Outcomes	68
2.13	Review Questions	69
2.14	Multiple Choice Questions	69

Chapter-3: Using the Shell

3.0	Objectives	72
3.1	Introduction to the Shell	72
3.2	Definition and Function of Shell	72
3.3	Purpose of Shell	73
3.4	Types of Shell	73
3.5	Characteristics and Responsibilities of Shell	75
3.5.1	The Linux Shells	76
3.6	The Command Line	77
3.6.1	Command Line Editing	77
3.6.2	Command and Filename Completion	78

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3.7 Metacharacters 79
3.8 Filename Substitution Metacharacters 79
3.8.1 Using the * Wildcard 80
3.8.2 Using the ? Wildcard 83
3.8.3 Matching a Range of Characters 84
3.8.4 Negating a Set with Meta Charater [!...] 85
3.8.5 Matching Shell Symbols 86
3.8.6 Generating Patterns 86
3.9 Input/Output Redirection 87
3.9.1 Redirecting Output 87
3.9.2 Redirecting Input 90
3.9.3 Pipes 91
3.10 Process Execution 93
3.11 Quoting Metacharacters 95
3.11.1 Backslash 96
3.11.2 Double Quotes 97
3.11.3 Single Quotes 97
3.12 Positional Parameters And Special Parameters 98
3.13 Creating New Commands 100
3.14 Outcomes 103
3.15 Review Questions 103
3.16 Multiple Choice Questions 103

Chapter-4: Filters

4.0 Objectives 106
4.1 Introduction 106
4.2 Filters 106
4.3 The grep Family 106
4.3.1 Specifying Pattern 107
4.3.2 Regular Expressions 108
4.3.3 The grep Family - Differences 114
4.4 Other Filters 121
4.5 The Stream Editor (Sed) 136
4.5.1 sed Script 138
4.5.2 sed Addresses 139
4.5.3 sed Commands 141

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NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

4.5.4 Input / Output Commands in sed Utility 149
4.6 The awk Pattern Scanning and Processing Language 153
4.6.1 Features of awk 154
4.6.2 Fields and Records in awk 155
4.6.3 Different Variables Available in awk 156
4.6.4 awk Script 157
4.6.5 Output Statements 159
4.6.6 Different Patterns available in awk 162
4.6.7 Operators used in awk Shell Script 164
4.6.8 Action in awk 167
4.6.9 awk Control Structures 168
4.6.10 Control Actions in awk 173
4.6.11 Functions 175
4.7 Outcomes 178
4.8 Review Questions 178
4.9 Multiple Choice Questions 179

Chapter-5: Shell Programming

5.0 Objectives 182
5.1 Introduction 182
5.2 Shell Variables 182
5.2.1 User Defined Variables 183
5.2.2 System Variables 186
5.2.3 Local Variables 187
5.2.4 Export Command 188
5.3 The first shell script 189
5.3.1 Features of Shell Script 189
5.3.2 Creating and Running a Script 189
5.3.3 Executing the Script 190
5.4 The read command 191
5.5 The &? Variable knowing the exit Status 192
5.6 More About the set Command 193
5.7 The exit Command 194
5.8 Control Structures 195
5.8.1 Branching Control Structures 195
5.8.2 Test Command 199
5.8.3 Loop Control Structures 204
5.9 The expr Command 209
5.10 Debugging Scripts 212

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(AUTONOMOUS)
NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

5.11 The script Command 213
5.12 The eval Command 214
5.13 The exec Command 214
5.14 Several shell programs 215
5.15 Outcomes 223
5.16 Review Questions 223
5.17 Multiple Choice Questions 224

Chapter-6: Process

6.0 Objectives 226
6.1 Introduction to Process 226
6.2 Process structure 226
6.2.1 Process Identification 226
6.2.2 Processor State Information 226
6.2.3 Process Control Information 227
6.3 Process Identification & User Identification 228
6.4 Background process 228
6.5 system 229
6.6 exit() 230
6.7 wait() 232
6.8 waitpid( ) 233
6.9 Parent and Child 235
6.10 Fork() 236
6.11 File Sharing 237
6.12 Orphan Process 241
6.13 Zombies 242
6.14 vfork() function 243
6.15 exec function 245
6.16 The execv() Function 247
6.17 The execvp() Function 248
6.18 System calls Library Functions 251
6.18.1 System Calls 251
6.18.2 Library Function 252
6.19 System Function 253
6.20 Outcomes 253
6.21 Review Questions 253
6.22 Multiple Choice Questions 254

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Mr. K. Gnanendra
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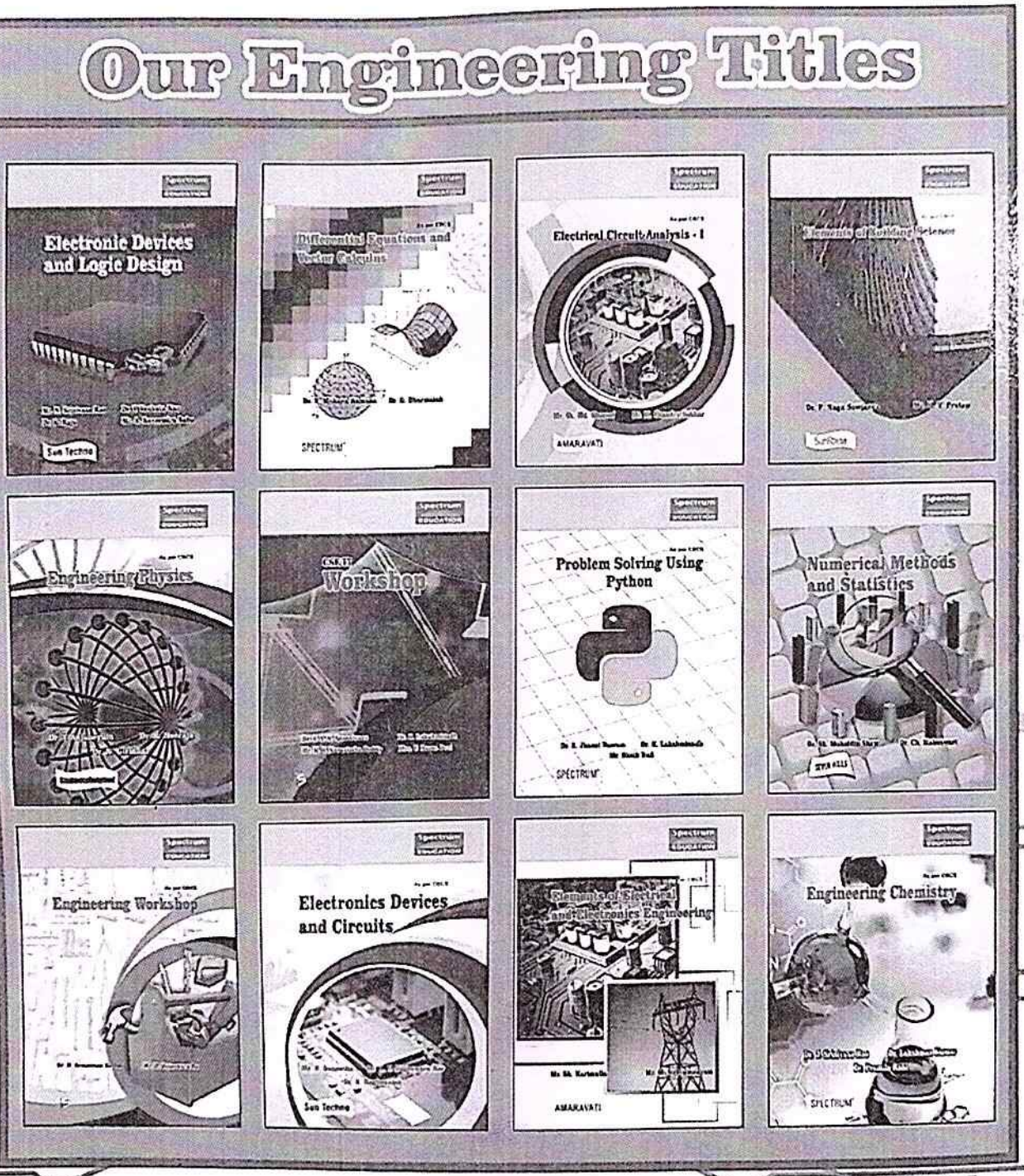

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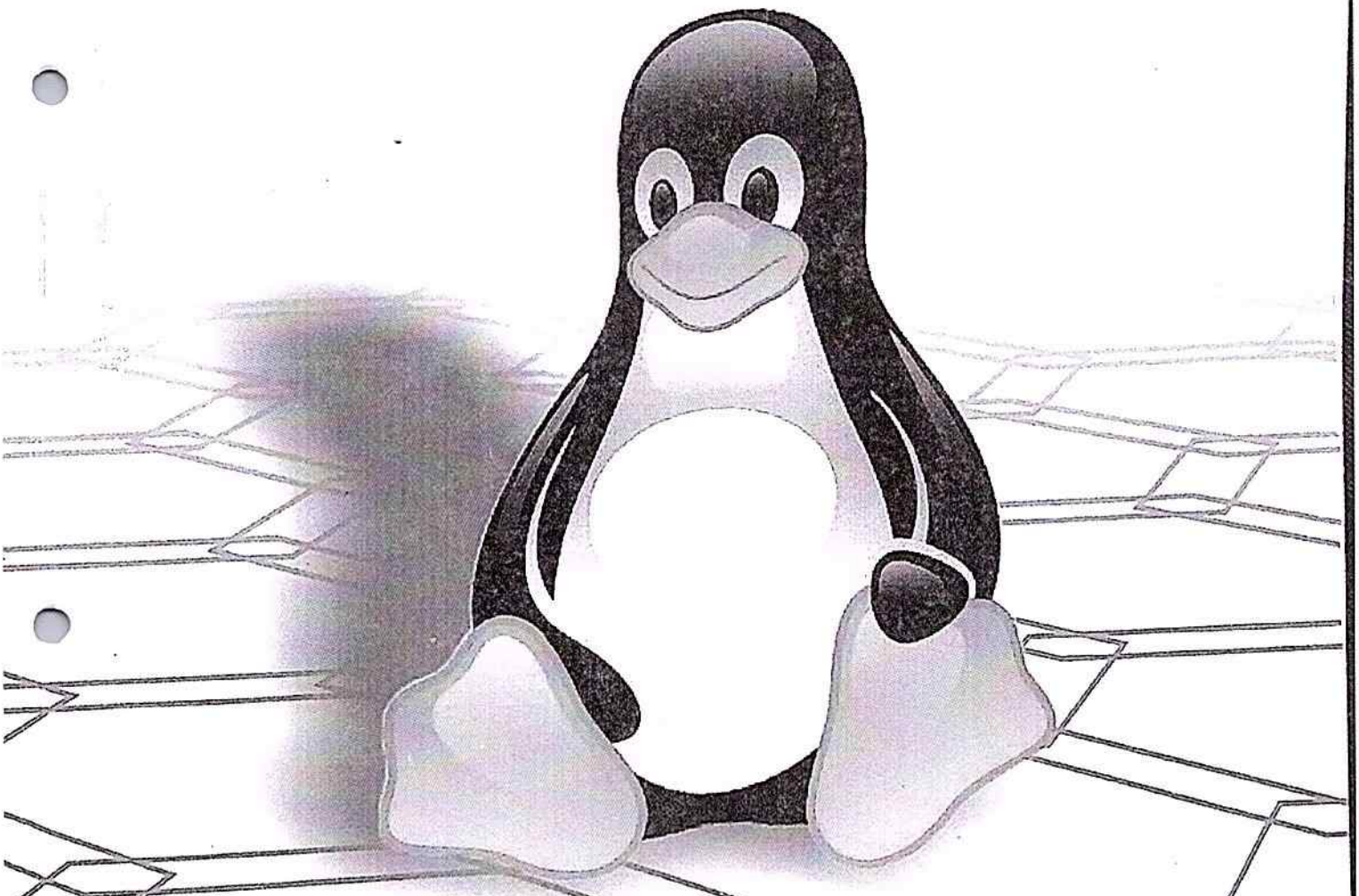

Dr. K. Lakshminadh
Mr. K. Gnanendra
Dr. S. N. Thirumala Rao
Mr. B. Siva Kanaka Raju

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Authors

Dr. K. Lakshminadh
Professor
Department of Computer Science & Engineering
Narasaraopeta Engineering College(Autonomous)
Narasaraopet, Guntur, A.P. - 522 601

Dr. S. N. Thirumala Rao
Professor
Department of Computer Science & Engineering
Narasaraopeta Engineering College(Autonomous)
Narasaraopet, Guntur, A.P. - 522 601

Mr. K. Gnanendra
Associate Professor
Department of Computer Science & Engineering
Narasaraopeta Engineering College(Autonomous)
Narasaraopet, Guntur, A.P. - 522 601

Mr. B. Siva Kanaka Raju
Assistant Professor
Department of Computer Science & Engineering
Narasaraopeta Engineering College(Autonomous)
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P.No:+91 40 23710657, 238000657 Fax: +91 40 23810657

Reg. Off

5-68, Pedda Gorpadu, Pakala, Tirupati, Chittoor - 517 112 AP, INDIA
mail:studentshelpline.in@gmail.com
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Chapter-1: Introduction

1.0	Objectives	2
1.1	Open Source Technology	2
1.1.1	Open Source Criteria	2
1.2	Introduction to Linux	3
1.2.1	Brief History	4
1.3	Linux Features	4
1.4	Pros and Cons of Linux	6
1.4.1	Linux Pros	6
1.4.2	Linux Cons	7
1.5	Linux Flavors	7
1.5.1	Linux and GNU	7
1.5.2	GNU / LINUX	8
1.5.3	Which Distribution should we Install	8
1.6	Logging in, Activating the user Interface and Logging out	9
1.6.1	Graphical Mode	9
1.6.2	Text Mode	11
1.7	Linux Components	11
1.8	Commands in Unix	12
1.9	Some Basic Commands	14
1.10	Disk Related Commands	37
1.11	Process Related Commands	39
1.12	Command Substitution	42
1.13	Giving Multiple Commands	43
1.14	Outcomes	44
1.15	Review Questions	44
1.16	Multiple Choice Questions	45

Chapter-2: The File System

2.0	Objectives	48
2.1	Introduction	48
2.2	The Linux File System	48
2.2.1	Files	48
2.2.2	Sorts of Files	49

IQAC

Principal
NARASARAOPETA ENGINEERING COLLEGE
(AUTONOMOUS)
NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

2.2.3 Basics of a File 49
2.3 File Handling Utilities 50
2.4 File System Layout 51
2.4.1 Directory Hierarchy 51
2.4.2 The File System in Reality 54
2.5 The most Important Files and Directorifs 54
2.5.1 The Kernel 54
2.5.2 The Shell 55
2.5.3 Your Home Directory 55
2.6 File Types 56
2.7 File Attributes and Permissions 57
2.7.1 File Permissions 58
2.7.2 Directory Permissions 59
2.7.3 Checking Permissions 60
2.7.4 Changing File Permission 61
2.8 The chmod command 62
2.8.1 Relative Permissions 63
2.8.2 Absolute Assignment of Permissions 64
2.9 Masking File Permissions 65
2.10 Changing Ownership and Group 66
2.10.1 Change Ownership (chown) Command 66
2.10.2 Change Group (chgrp) Command 67
2.11 file command 67
2.12 Outcomes 68
2.13 Review Questions 69
2.14 Multiple Choice Questions 69

Chapter-3: Using the Shell

3.0 Objectives 72
3.1 Introduction to the Shell 72
3.2 Definition and Function of Shell 72
3.3 Purpose of Shell 73
3.4 Types of Shell 73
3.5 Characteristics and Responsibilities of Shell 75
3.5.1 The Linux Shells 76
3.6 The Command Line 77
3.6.1 Command Line Editing 77
3.6.2 Command and Filename Completion 78

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NARASARAOPETA ENGINEERING COLLEGE
(AUTONOMOUS)
NARASARAOPET - 522 601.
Guntur (Dist.).

3.7 Metacharacters 79
3.8 Filename Substitution Metacharacters 79
3.8.1 Using the * Wildcard 80
3.8.2 Using the ? Wildcard 83
3.8.3 Matching a Range of Characters 84
3.8.4 Negating a Set with Meta Charater [!...] 85
3.8.5 Matching Shell Symbols 86
3.8.6 Generating Patterns 86
3.9 Input/Output Redirection 87
3.9.1 Redirecting Output 87
3.9.2 Redirecting Input 90
3.9.3 Pipes 91
3.10 Process Execution 93
3.11 Quoting Metacharacters 95
3.11.1 Backslash 96
3.11.2 Double Quotes 97
3.11.3 Single Quotes 97
3.12 Positional Parameters And Special Parameters 98
3.13 Creating New Commands 100
3.14 Outcomes 103
3.15 Review Questions 103
3.16 Multiple Choice Questions 103

Chapter-4: Filters

4.0 Objectives 106
4.1 Introduction 106
4.2 Filters 106
4.3 The grep Family 106
4.3.1 Specifying Pattern 107
4.3.2 Regular Expressions 108
4.3.3 The grep Family - Differences 114
4.4 Other Filters 121
4.5 The Stream Editor (Sed) 136
4.5.1 sed Script 138
4.5.2 sed Addresses 139
4.5.3 sed Commands 141

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4.5.4 Input / Output Commands in sed Utility 149
4.6 The awk Pattern Scanning and Processing Language 153
4.6.1 Features of awk 154
4.6.2 Fields and Records in awk 155
4.6.3 Different Variables Available in awk 156
4.6.4 awk Script 157
4.6.5 Output Statements 159
4.6.6 Different Patterns available in awk 162
4.6.7 Operators used in awk Shell Script 164
4.6.8 Action in awk 167
4.6.9 awk Control Structures 168
4.6.10 Control Actions in awk 173
4.6.11 Functions 175
4.7 Outcomes 178
4.8 Review Questions 178
4.9 Multiple Choice Questions 179

Chapter-5: Shell Programming

5.0 Objectives 182
5.1 Introduction 182
5.2 Shell Variables 182
5.2.1 User Defined Variables 183
5.2.2 System Variables 186
5.2.3 Local Variables 187
5.2.4 Export Command 188
5.3 The first shell script 189
5.3.1 Features of Shell Script 189
5.3.2 Creating and Running a Script 189
5.3.3 Executing the Script 190
5.4 The read command 191
5.5 The &? Variable knowing the exit Status 192
5.6 More About the set Command 193
5.7 The exit Command 194
5.8 Control Structures 195
5.8.1 Branching Control Structures 195
5.8.2 Test Command 199
5.8.3 Loop Control Structures 204
5.9 The expr Command 209
5.10 Debugging Scripts 212

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5.11 The script Command 213
5.12 The eval Command 214
5.13 The exec Command 214
5.14 Several shell programs 215
5.15 Outcomes 223
5.16 Review Questions 223
5.17 Multiple Choice Questions 224

Chapter-6: Process

6.0 Objectives 226
6.1 Introduction to Process 226
6.2 Process structure 226
6.2.1 Process Identification 226
6.2.2 Processor State Information 226
6.2.3 Process Control Information 227
6.3 Process Identification & User Identification 228
6.4 Background process 228
6.5 system 229
6.6 exit() 230
6.7 wait() 232
6.8 waitpid( ) 233
6.9 Parent and Child 235
6.10 Fork() 236
6.11 File Sharing 237
6.12 Orphan Process 241
6.13 Zombies 242
6.14 vfork() function 243
6.15 exec function 245
6.16 The execv() Function 247
6.17 The execvp() Function 248
6.18 System calls Library Functions 251
6.18.1 System Calls 251
6.18.2 Library Function 252
6.19 System Function 253
6.20 Outcomes 253
6.21 Review Questions 253
6.22 Multiple Choice Questions 254

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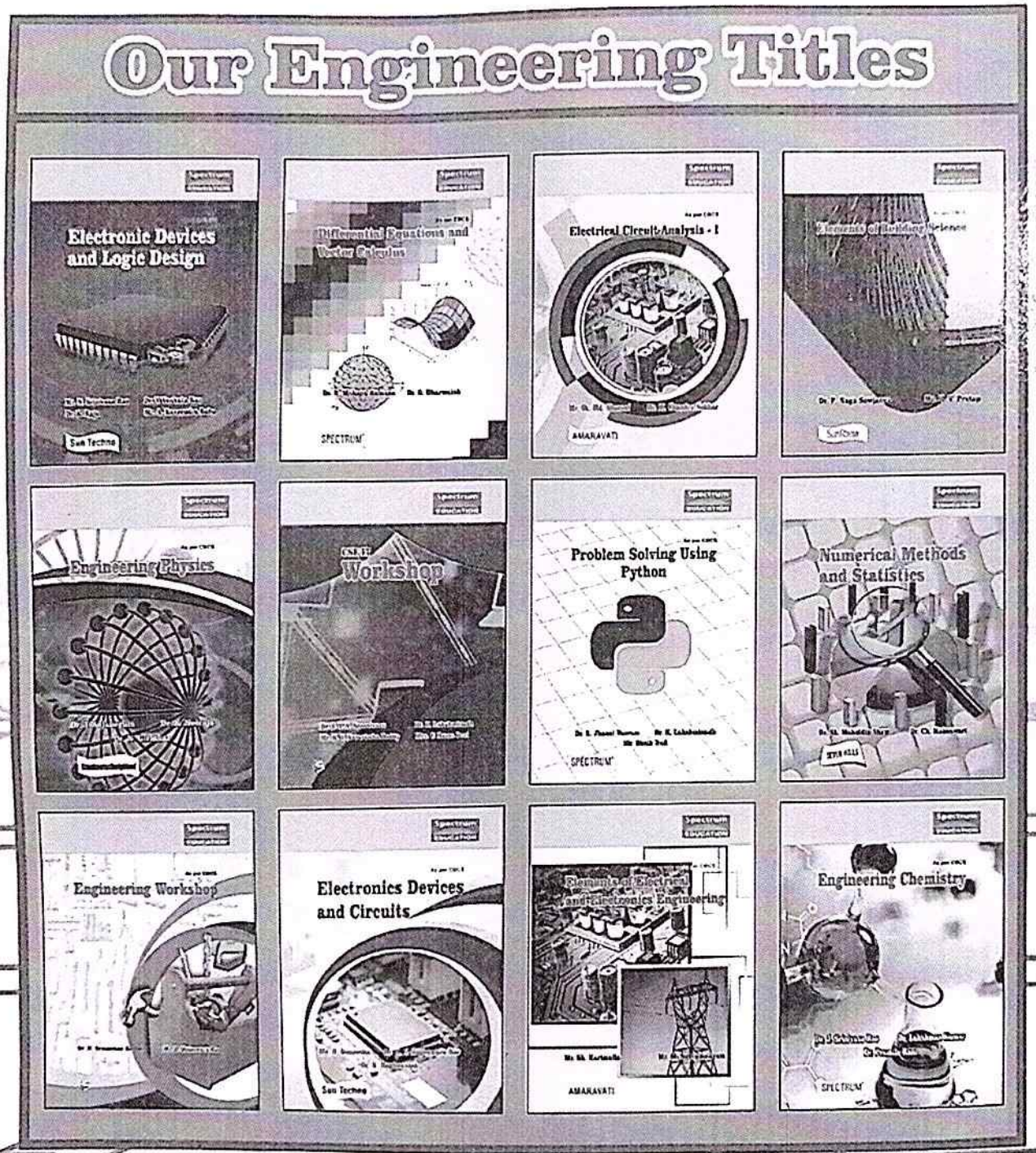

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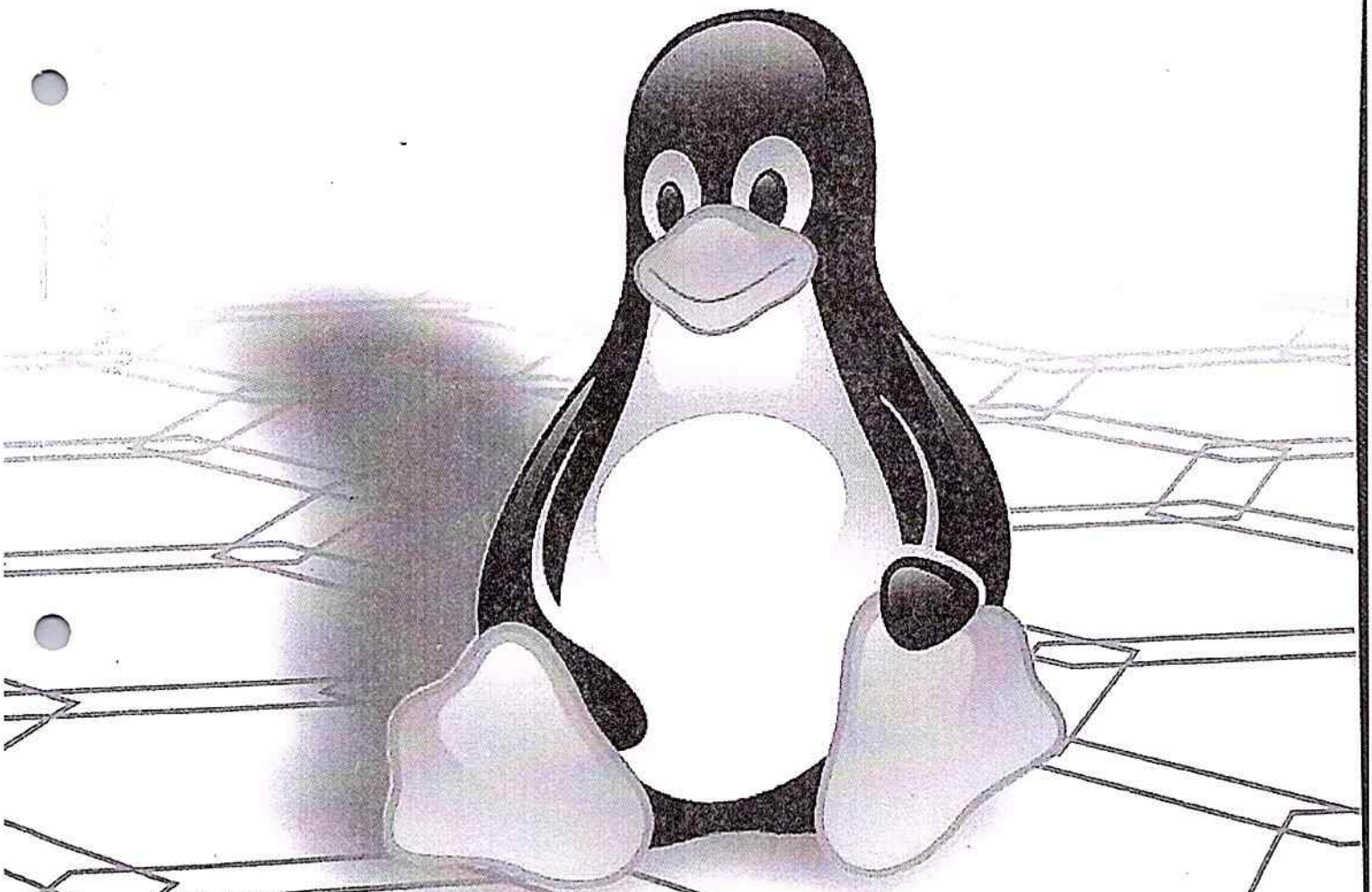

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Authors

Dr. K. Lakshminadh
Professor
Department of Computer Science & Engineering
Narasaraopeta Engineering College(Autonomous)
Narasaraopet, Guntur, A.P. - 522 601

Dr. S. N. Thirumala Rao
Professor
Department of Computer Science & Engineering
Narasaraopeta Engineering College(Autonomous)
Narasaraopet, Guntur, A.P. - 522 601

Mr. K. Gnanendra
Associate Professor
Department of Computer Science & Engineering
Narasaraopeta Engineering College(Autonomous)
Narasaraopet, Guntur, A.P. - 522 601

Mr. B. Siva Kanaka Raju
Assistant Professor
Department of Computer Science & Engineering
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Chapter-1: Introduction

1.0	Objectives	2
1.1	Open Source Technology	2
1.1.1	Open Source Criteria	2
1.2	Introduction to Linux	3
1.2.1	Brief History	4
1.3	Linux Features	4
1.4	Pros and Cons of Linux	6
1.4.1	Linux Pros	6
1.4.2	Linux Cons	7
1.5	Linux Flavors	7
1.5.1	Linux and GNU	7
1.5.2	GNU / LINUX	8
1.5.3	Which Distribution should we Install	8
1.6	Logging in, Activating the user Interface and Logging out	9
1.6.1	Graphical Mode	9
1.6.2	Text Mode	11
1.7	Linux Components	11
1.8	Commands in Unix	12
1.9	Some Basic Commands	14
1.10	Disk Related Commands	37
1.11	Process Related Commands	39
1.12	Command Substitution	42
1.13	Giving Multiple Commands	43
1.14	Outcomes	44
1.15	Review Questions	44
1.16	Multiple Choice Questions	45

Chapter-2: The File System

2.0	Objectives	48
2.1	Introduction	48
2.2	The Linux File System	48
2.2.1	Files	48
2.2.2	Sorts of Files	49

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2.2.3 Basics of a File 49
2.3 File Handling Utilities 50
2.4 File System Layout 51
2.4.1 Directory Hierarchy 51
2.4.2 The File System in Reality 54
2.5 The most Important Files and Directorifs 54
2.5.1 The Kernel 54
2.5.2 The Shell 55
2.5.3 Your Home Directory 55
2.6 File Types 56
2.7 File Attributes and Permissions 57
2.7.1 File Permissions 58
2.7.2 Directory Permissions 59
2.7.3 Checking Permissions 60
2.7.4 Changing File Permission 61
2.8 The chmod command 62
2.8.1 Relative Permissions 63
2.8.2 Absolute Assignment of Permissions 64
2.9 Masking File Permissions 65
2.10 Changing Ownership and Group 66
2.10.1 Change Ownership (chown) Command 66
2.10.2 Change Group (chgrp) Command 67
2.11 file command 67
2.12 Outcomes 68
2.13 Review Questions 69
2.14 Multiple Choice Questions 69

Chapter-3: Using the Shell

3.0 Objectives 72
3.1 Introduction to the Shell 72
3.2 Definition and Function of Shell 72
3.3 Purpose of Shell 73
3.4 Types of Shell 73
3.5 Characteristics and Responsibilities of Shell 75
3.5.1 The Linux Shells 76
3.6 The Command Line 77
3.6.1 Command Line Editing 77
3.6.2 Command and Filename Completion 78

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3.7 Metacharacters 79
3.8 Filename Substitution Metacharacters 79
3.8.1 Using the * Wildcard 80
3.8.2 Using the ? Wildcard 83
3.8.3 Matching a Range of Characters 84
3.8.4 Negating a Set with Meta Charater [!...] 85
3.8.5 Matching Shell Symbols 86
3.8.6 Generating Patterns 86
3.9 Input/Output Redirection 87
3.9.1 Redirecting Output 87
3.9.2 Redirecting Input 90
3.9.3 Pipes 91
3.10 Process Execution 93
3.11 Quoting Metacharacters 95
3.11.1 Backslash 96
3.11.2 Double Quotes 97
3.11.3 Single Quotes 97
3.12 Positional Parameters And Special Parameters 98
3.13 Creating New Commands 100
3.14 Outcomes 103
3.15 Review Questions 103
3.16 Multiple Choice Questions 103

Chapter-4: Filters

4.0 Objectives 106
4.1 Introduction 106
4.2 Filters 106
4.3 The grep Family 106
4.3.1 Specifying Pattern 107
4.3.2 Regular Expressions 108
4.3.3 The grep Family - Differences 114
4.4 Other Filters 121
4.5 The Stream Editor (Sed) 136
4.5.1 sed Script 138
4.5.2 sed Addresses 139
4.5.3 sed Commands 141

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4.5.4	Input / Output Commands in sed Utility	149
4.6	The awk Pattern Scanning and Processing Language	153
4.6.1	Features of awk	154
4.6.2	Fields and Records in awk	155
4.6.3	Different Variables Available in awk	156
4.6.4	awk Script	157
4.6.5	Output Statements	159
4.6.6	Different Patterns available in awk	162
4.6.7	Operators used in awk Shell Script	164
4.6.8	Action in awk	167
4.6.9	awk Control Structures	168
4.6.10	Control Actions in awk	173
4.6.11	Functions	175
4.7	Outcomes	178
4.8	Review Questions	178
4.9	Multiple Choice Questions	179
	Chapter-5: Shell Programming	
5.0	Objectives	182
5.1	Introduction	182
5.2	Shell Variables	182
5.2.1	User Defined Variables	183
5.2.2	System Variables	186
5.2.3	Local Variables	187
5.2.4	Export Command	188
5.3	The first shell script	189
5.3.1	Features of Shell Script	189
5.3.2	Creating and Running a Script	189
5.3.3	Executing the Script	190
5.4	The read command	191
5.5	The &? Variable knowing the exit Status	192
5.6	More About the set Command	193
5.7	The exit Command	194
5.8	Control Structures	195
5.8.1	Branching Control Structures	195
5.8.2	Test Command	199
5.8.3	Loop Control Structures	204
5.9	The expr Command	209
5.10	Debugging Scripts	212

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5.11 The script Command 213
5.12 The eval Command 214
5.13 The exec Command 214
5.14 Several shell programs 215
5.15 Outcomes 223
5.16 Review Questions 223
5.17 Multiple Choice Questions 224

Chapter-6: Process

6.0 Objectives 226
6.1 Introduction to Process 226
6.2 Process structure 226
6.2.1 Process Identification 226
6.2.2 Processor State Information 226
6.2.3 Process Control Information 227
6.3 Process Identification & User Identification 228
6.4 Background process 228
6.5 system 229
6.6 exit() 230
6.7 wait() 232
6.8 waitpid( ) 233
6.9 Parent and Child 235
6.10 Fork() 236
6.11 File Sharing 237
6.12 Orphan Process 241
6.13 Zombies 242
6.14 vfork() function 243
6.15 exec function 245
6.16 The execv() Function 247
6.17 The execvp() Function 248
6.18 System calls Library Functions 251
6.18.1 System Calls 251
6.18.2 Library Function 252
6.19 System Function 253
6.20 Outcomes 253
6.21 Review Questions 253
6.22 Multiple Choice Questions 254

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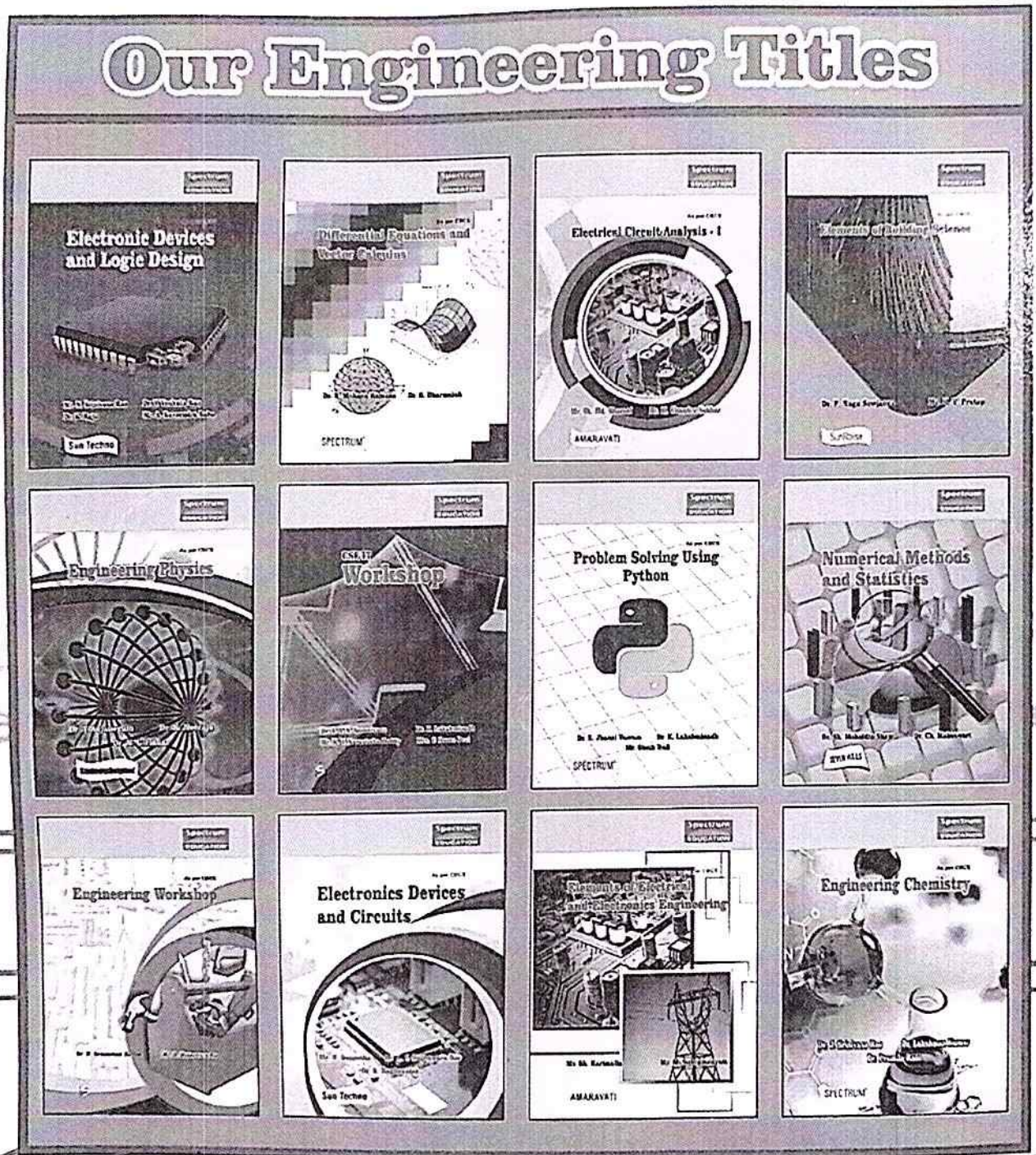

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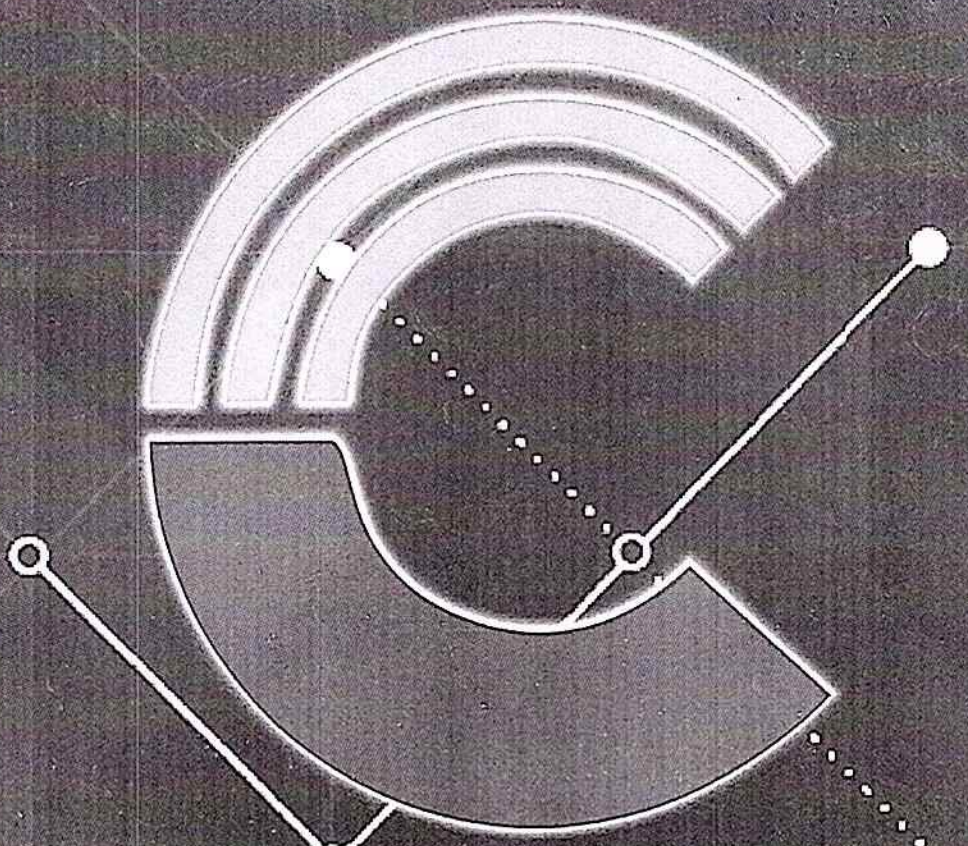

Dr. S. V. N. Sreenivasu
Dr. S. Siva Nageswara Rao
Dr. M. Venkata Reddy
Dr. S. N. Thirumala Rao

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Authors

Dr. S. V. N. Sreenivasu
Professor
Department of Computer Science & Engineering
Narasaraopeta Engineering College(Autonomous)
Narasaraopet, Guntur - 522 601, A.P.

Dr. S. Siva Nageswara Rao
Professor
Department of Computer Science & Engineering
Narasaraopeta Engineering College(Autonomous)
Narasaraopet, Guntur - 522 601, A.P.

Dr. M. Venkata Reddy
Associate Professor
Department of Computer Science & Engineering
Narasaraopeta Engineering College(Autonomous)
Narasaraopet, Guntur - 522 601, A.P.

Dr. S. N. Thirumala Rao
Professor
Department of Computer Science & Engineering
Narasaraopeta Engineering College(Autonomous)
Narasaraopet, Guntur - 522 601, A.P.

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Near B K Guda Park, S R Nagar, Hyderabad - 500 038, INDIA
P.No:+91 40 23710657, 238000657 Fax: +91 40 23810657

Reg. Off

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mail:studentshelpline.in@gmail.com
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Chapter-1: Introduction to Computers

1.0	Objectives	1
1.1	Introduction	1
1.2	Classification of Computers	2
1.3	Overview of a Computer	3
1.4	Components of a Computer	5
1.5	Computing Environments	13
1.6	Introduction to OS	17
	1.6.1 Classification of Operating System	17
	1.6.2 Purpose of Operating System	18
	1.6.3 Functions of Operating System	18
1.7	Classification of Programming Languages	19
1.8	Creating and Running Programs	22
1.9	Number System	23
	1.9.1 Binary, Decimal, Hexadecimal and Octal Conversions	26
1.10	Storing Integers	28
	1.10.1 Storing Real Numbers	29
1.11	Summary	30
1.12	Key Terms	31
1.13	Exercises	31
1.14	Multiple Choice Questions	32

Chapter-2: Problem Solving and Algorthms

2.0	Objectives	35
2.1	Introduction to Algorithms	35
2.2	Problem Solving	36
	2.2.1 Steps Involved in Solving Logical and Numerical Problems	37
2.3	Characteristics of an Algorithm	37
2.4	Strategy for Designing Algorithms	39
2.5	Different Ways of Stating Algorithms	40
	2.5.1 Step-form, Pseudo-code, Flowchart	40
2.6	Structured Programming Concept	40
2.7	Implementation of Algorithms	41

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Guntur (Dist.), A.P.

2.8 Analysis of Algorithms 41
2.8.1 Efficiency of an Algorithm 42
2.9 Simple Examples of the Algorithm 43
2.10 Pseudo Code 44
2.11 Flow Charts 46
2.11.1 Types of Flow Charts 47
2.11.2 Advantages of Flowcharts 48
2.11.3 Differences between Flowchart and Algorithm 48
2.11.4 Limitations of Flowcharts 48
2.12 Program Development Steps 50
2.13 Tracing an Algorithm to Depict Logic 51
2.14 Specification for Converting Algorithms into Programs 52
2.15 Additional Algorithms and Flowcharts 53
2.16 Summary 64
2.17 Key Terms 64
2.18 Exercises 65
2.19 Multiple Choice Questions 65

Chapter-3: Basics of 'C'

3.0 Objectives 69
3.1 Introduction of 'C' 69
3.2 Characteristics of 'C' Language 71
3.3 'C' Features 71
3.4 'C' Limitations 72
3.5 Basic Structure of 'C' Program 72
3.6 Writing the First C Program, Comments 75
3.6.1 Compiling and Executing C Programs 76
3.6.2 Syntax and Logical Errors in Compilation 77
3.7 Program Statements 78
3.8 'C' Tokens 79
3.8.1 Keywords 79
3.8.2 Identifiers 80
3.8.3 Constants 80
3.8.4 Escape Sequences 82
3.8.5 Special Symbols 82
3.8.6 'C' Operators 83
3.8.7 Variables 83

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Principal
NARASARAOPETA ENGINEERING COLLEGE
(AUTONOMOUS)
NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

3.9 Basic Data Types in C 88
3.10 Operators 91
3.10.1 Arithmetic Operators 92
3.10.2 Relational Operators 94
3.10.3 Logical Operators 95
3.10.4 Assignment Operators 98
3.10.5 Increment and Decrement Operators 101
3.10.6 Conditional Operators 103
3.10.7 Bitwise Operators 104
3.10.8 Special Operators 109
3.11 Expressions and Evaluation 112
3.12 Precedence and Associativity 115
3.13 Type Conversions 119
3.14 Type Casting 120
3.15 Input and Output Functions 124
3.15.1 Formatted Input and Output Functions 124
3.15.2 Non-formatted Input and Output Functions 126
3.16 Additional Programs 128
3.17 Common Programming Errors 131
3.17 Summary 139
3.18 Key Terms 139
3.19 Exercises 141
3.20 Multiple Choice Questions 142

Chapter-4: Control Statements

4.0 Objectives 149
4.1 Introduction 149
4.2 Statements 150
4.3 Decision Making (or) Conditional Statements 150
4.3.1 if, if-else, nested if, nested if-else and else if Statements 151
4.3.1.1 if Statement (One-Way (if) Selection) 151
4.3.1.2 if....else Statement (Two-way selection) 153
4.3.1.3 Nested if Statements 154
4.3.1.4 else-if Statement 155
4.3.1.5 Dangling else Problem 157
4.3.1.6 nested if-else Statements 158
4.3.2 Multiway Selection: switch case Statements 160

IQAC
Principal
NARASARAOPETA ENGINEERING COLLEGE
(AUTONOMOUS)
NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

4.4 Repetition 163
4.4.1 Concept of Loop 163
4.5 Looping Statements 164
4.5.1 while Loop/while Statements 164
4.5.2 do-while Loop/do-while Statements 166
4.5.3 for Loop/for Statements 168
4.5.4 Use of Comma Operator in for Loop 170
4.6 Nested Loops 172
4.7 Special Control Statement 177
4.7.1 goto Statement 177
4.7.2 break Statement 179
4.7.3 continue Statement 180
4.7.4 Return Statement 182
4.7.5 exit Statement 183
4.7.6 Difference between break and continue Statements 184
4.7.7 null Statement 185
4.8 Applications of Loops 185
4.9 Additional Programs 186
4.10 Factoring Methods 189
4.11 Common Programming Errors 194
4.12 Additional Gate Questions 204
4.13 Summary 206
4.14 Key Terms 206
4.15 Exercises 206
4.16 Multiple Choice Questions 207

Chapter-5: Arrays and Strings

5.0 Objectives 219
5.1 Introduction 220
5.2 Arrays Concepts 220
5.2.1 Declaration of Arrays 222
5.2.2 Initialization of Arrays 224
5.2.3 Accessing Array Elements 226
5.2.4 Storing Array Elements 228
5.3 Calculating the Length of the Array 229
5.4 Using Arrays in C 230
5.5 Types of Arrays 232

Principal
NARASARAOPETA ENGINEERING COLLEGE
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5.5.1	One Dimensional Array	232
5.5.2	Two Dimensional Arrays	235
5.5.3	Multi Dimensional Arrays	238
5.5.4	Comparison of Single Dimensional and Multi Dimensional Arrays	240
5.6	Examples of Two Dimensional Arrays	242
5.6.1	Addition of Arrays	242
5.6.2	Subtraction of Arrays	243
5.6.3	Multiplication of Arrays	244
5.7	Sparse Matrices	248
5.8	Common Programming Errors	251
5.9	Strings	253
5.10	String Header or 'C' Library Functions for Strings	255
5.11	'C' Strings	256
5.12	Handling Strings as Array of Characters	257
5.13	String Input/Output Functions	258
5.14	String Handling/Manipulation Functions	261
5.15	String/Data Conversion	267
5.16	Miscellaneous String Functions	269
5.17	Arrays of Strings	270
5.18	Additional Examples	273
5.19	Common Programming Errors	279
5.20	Summary	281
5.21	Key Terms	281
5.22	Exercises	282
5.23	Multiple Choice Questions	283

Chapter-6: Functions

6.0	Objectives	291
6.1	Introduction	292
6.2	Designing Structured Programs	292
6.3	Concepts of Function	292
6.3.1	Purpose of Function	294
6.4	Functions in C	294
6.4.1	Function Prototype Declaration	294
6.4.2	Function Definition	294
6.4.3	Function Calling	296
6.4.4	Defining and Accessing of Functions	297

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6.4.5	Return Statement	297
6.4.6	Characteristics of Function	298
6.5	Passing Arguments (or) Passing Parameters	299
6.5.1	Formal Parameters and Actual Parameters	300
6.5.2	Mechanism of Passing Parameters	301
6.5.3	Differences between Call-by-Value and Call-by-reference	303
6.5.4	Passing Variable Number of Arguments to a Function	305
6.6	Void Functions	306
6.7	Function Invocation and Function Execution	306
6.8	Nesting of Functions	307
6.9	User Defined Functions	308
6.9.1	Functions with no Arguments and no Return Values (no communication)	309
6.9.2	Functions with Arguments but no Return Values (one way communication)	310
6.9.3	Functions with no Arguments and Return Values	312
6.9.4	Functions with Arguments and Return Values(two way communication)	312
6.10	Standard/Library Functions	315
6.10.1	Built–in Functions	317
6.11	Static Functions	319
6.12	Scope of Variables	320
6.12.1	Scope Rules	320
6.13	Storage Classes	323
6.13.1	Auto Storage Class	324
6.13.2	Extern Storage Class	324
6.13.3	Register Storage Class	325
6.13.4	Static Storage Class	325
6.13.5	Comparison of Different Storage Class Variables	326
6.14	Passing Arrays to Functions	329
6.15	Inter Function communication	330
6.16	Type Qualifiers	332
6.17	Recursion	334
6.17.1	Recursive Functions	334
6.17.2	Advantages of Recursion	335
6.17.3	Limitations of Recursion	335
6.17.4	Types of Recursion	338
6.18	Towers of Hanoi	341
6.19	Recursion VS Iteration	345

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6.20 User Defined Functions 345
6.20.1 Introduction 345
6.20.2 Need for User Defined Functions 345
6.20.3 Return Values and Their Types 346
6.20.4 Functions Returning Non-integers 347
6.21 Additional Programs 348
6.22 Tips and Programming Errors 351
6.23 Solved Gate Questions 355
6.24 Summary 365
6.25 Key Terms 366
6.26 Exercises 366
6.27 Multiple Choice Questions 367

Chapter-7: Pointers

7.0 Objectives 379
7.1 Introduction 379
7.2 Pointers 380
7.2.1 Declaring Pointer Variables 380
7.2.2 Assigning Pointers 381
7.2.3 Initialization of a Pointer 382
7.2.4 Accessing Pointer's Contents 383
7.3 Address and Indirection Operator 384
7.4 Uses of Pointers 385
7.5 Disadvantages of Pointers 385
7.6 Arrays and Pointers 385
7.6.1 Relationship between Pointers and Arrays 389
7.7 Array of Pointers 389
7.8 Dynamic Memory Allocation 391
7.8.1 Dynamic Allocation of Arrays 394
7.9 Operations on Pointers 396
7.10 Pointers to Pointers 402
7.11 Null Pointers 404
7.12 Pointers for inter Function Communication 405
7.13 Pointers and Strings 406
7.14 Dangling Pointer 408
7.15 Pointer to Array 408
7.16 Passing Pointers as Arguments to Functions 409

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7.17 Pointers to Functions 411
7.17.1 Function Returning a Pointer 412
7.18 Type void pointers 414
7.19 Difference between Array Name and Pointer 415
7.20 Additional Programs 416
7.21 Common Programming Errors 418
7.22 Solved Gate Questions 421
7.23 Summary 426
7.24 Key Terms 426
7.25 Exercises 427
7.26 Multiple Choice Questions 427

Chapter-8: Structures and Unions

8.0 Objectives 435
8.1 Introduction 436
8.2 Declaring a Structure and its Members 436
8.2.1 The Type Definition (typedef) 437
8.3 Initialization of a Structure 438
8.4 Accessing Members of a Structure 439
8.5 Assigning Values/Operations on Structures 440
8.6 Size of a Structure 441
8.6.1 Using Sizeof Operator 442
8.6.2 Without Using Sizeof Operator 442
8.7 Array of Structures 443
8.8 Differences between Arrays and Structure 446
8.9 Nested Structures 447
8.10 Structures and Functions 448
8.11 Self-referential Structures 450
8.12 Table Lookup 453
8.13 Structures and Pointers 455
8.13.1 Pointers to Structures 455
8.13.2 Pointers as Structure Members 457
8.13.3 Passing Structure Pointer as an Argument to a Function 459
8.14 Structures Containing Arrays 460
8.15 Bit Fields 464
8.16 Introduction to Unions 465
8.17 Unions VS Structures 469

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8.18 Enumerated Data Types 469
8.19 Additional Programs 470
8.20 Programming Errors 475
8.21 Summary 476
8.22 Key Terms 476
8.23 Exercises 477
8.24 Multiple Choice Questions 478

Chapter-9: File Handling in C

9.0 Objectives 483
9.1 Introduction 484
9.2 Using Files in C 484
9.3 Classification of Files 485
9.3.1 Differences between Text and Binary Files 486
9.4 File Structure 486
9.5 Streams 487
9.6 File Operations 488
9.6.1 Opening File 489
9.6.2 Reading File 491
9.6.3 Writing to a File 491
9.6.4 Closing Files 492
9.6.5 State of File 494
9.6.6 Appending Data to Existing Files 494
9.7 Standard Library Input/Output Functions for Files 495
9.8 Formatted File I/O Functions 497
9.9 Character Oriented Functions 500
9.10 File Handling in C 504
9.11 Concept of Binary files 505
9.12 Using Binary Files 506
9.12.1 State of a File 506
9.12.2 Opening Binary Files 507
9.12.3 Update Mode 507
9.12.4 Closing Binary Files 508
9.13 Standard Library Functions for Files 508
9.13.1 Block Input and Output Functions 508
9.13.2 File Status Functions 511
9.13.3 Positioning Functions 513

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9.13.4 System File Operations 514
9.14 Accepting Command Line Arguments 516
9.15 Files of Records, Random Access to Files of Records 517
9.16 Converting File Type 519
9.17 Additional Programs 524
9.18 Programming Errors 528
9.19 Summary 531
9.20 Exercise 531
9.21 Multiple Choice Questions 532

Chapter-10: Additional Features of 'C' 537

10.0 Objectives 537
10.1 Preprocessor Commands 543
10.2 Macros 549
10.3 Command-Line Arguments 552
10.4 Variable-Length Argument Lists 552
10.5 Error Handling-stderr and Exit 553
10.6 Programming Errors 557
10.7 Summary 555
10.8 Exercise 555
10.9 Multiple Choice Questions

Chapter-11: Searching and Sorting 557

11.0 Objectives 557
11.1 Introduction 558
11.2 Searching 558
11.2.1 Linear Search 562
11.2.2 Binary Search 568
11.3 Sorting 569
11.3.1 Bubble Sort 572
11.3.2 Selection Sort 575
11.3.3 Insertion Sort 579
11.3.4 Comparison of Various Sorting Algorithms 581
11.4 Summary 581
11.5 Key Terms 582
11.6 Exercises 582
11.7 Multiple Choice Questions

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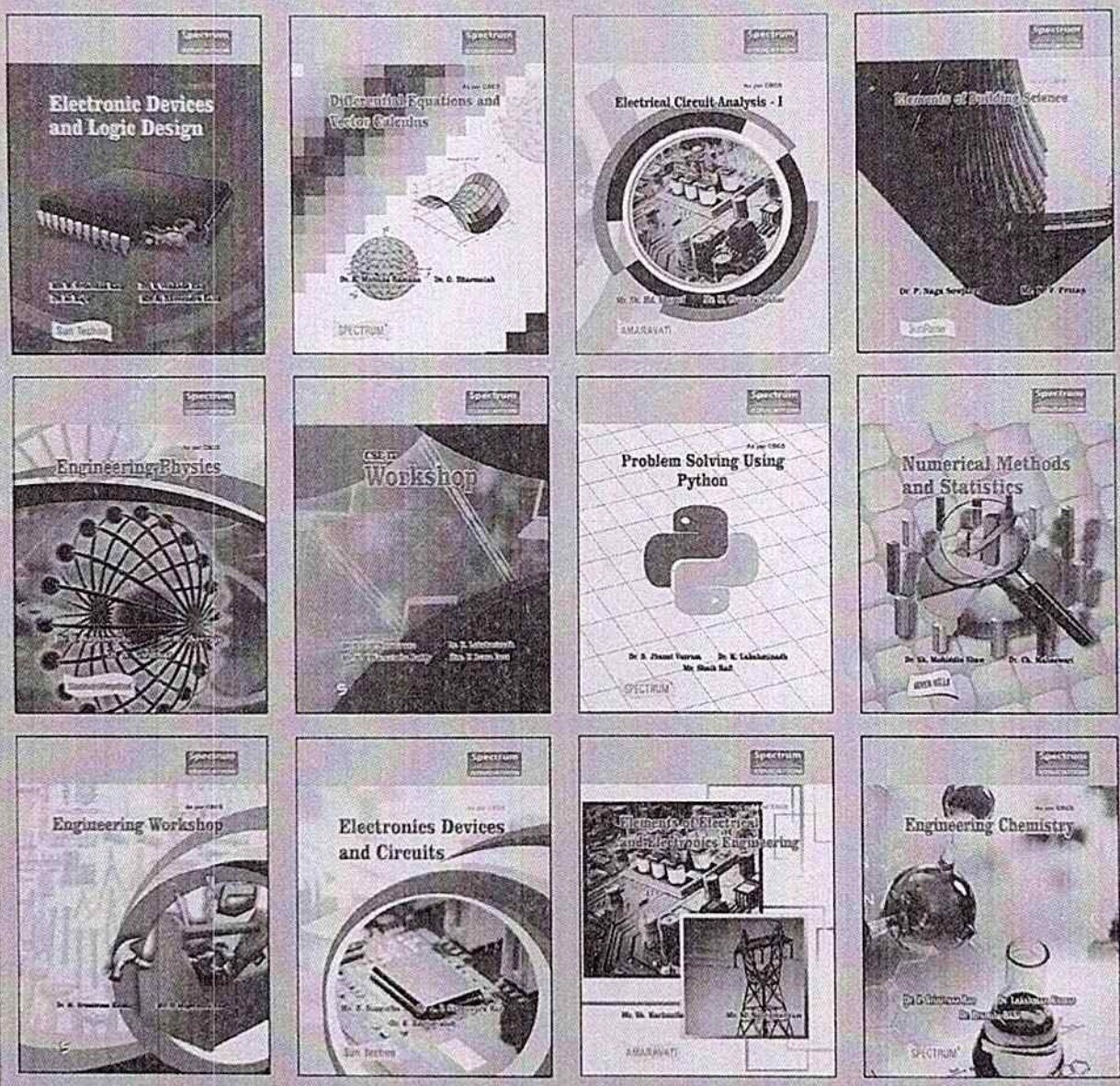

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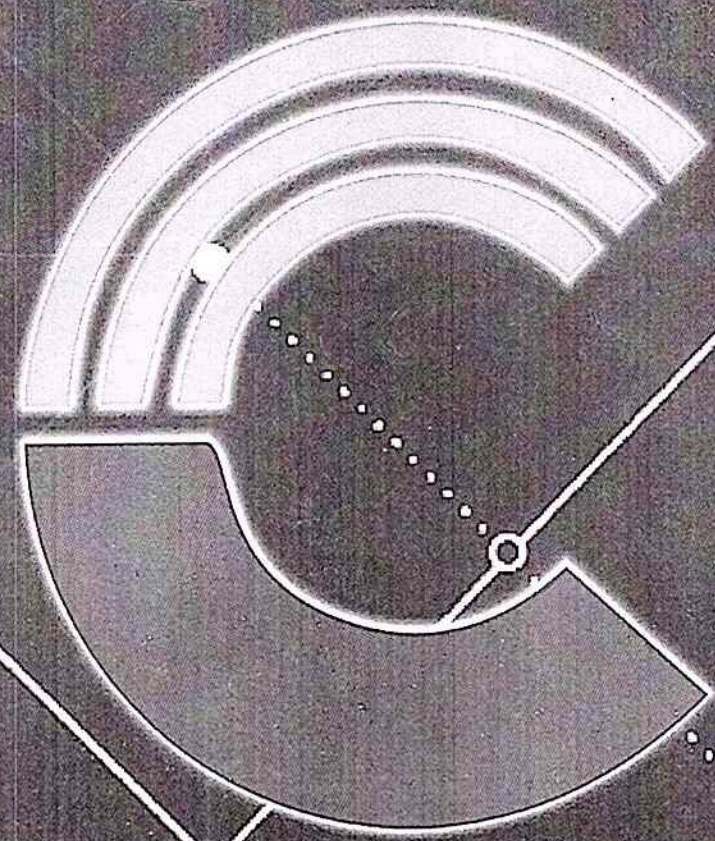

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Problem Solving using 'C'

Authors

Dr. S. V. N. Sreenivasu
Professor
Department of Computer Science & Engineering
Narasaraopeta Engineering College(Autonomous)
Narasaraopet, Guntur - 522 601, A.P.

Dr. S. Siva Nageswara Rao
Professor
Department of Computer Science & Engineering
Narasaraopeta Engineering College(Autonomous)
Narasaraopet, Guntur - 522 601, A.P.

Dr. M. Venkata Reddy
Associate Professor
Department of Computer Science & Engineering
Narasaraopeta Engineering College(Autonomous)
Narasaraopet, Guntur - 522 601, A.P.

Dr. S. N. Thirumala Rao
Professor
Department of Computer Science & Engineering
Narasaraopeta Engineering College(Autonomous)
Narasaraopet, Guntur - 522 601, A.P.

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P.No:+91 40 23710657, 238000657 Fax: +91 40 23810657

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1.4	Components of a Computer	5
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	1.6.1 Classification of Operating System	17
	1.6.2 Purpose of Operating System	18
	1.6.3 Functions of Operating System	18
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1.8	Creating and Running Programs	22
1.9	Number System	23
	1.9.1 Binary, Decimal, Hexadecimal and Octal Conversions	26
1.10	Storing Integers	28
	1.10.1 Storing Real Numbers	29
1.11	Summary	30
1.12	Key Terms	31
1.13	Exercises	31
1.14	Multiple Choice Questions	32

Chapter-2: Problem Solving and Algorthms

2.0	Objectives	35
2.1	Introduction to Algorithms	35
2.2	Problem Solving	36
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Guntur (Dist.), A.P.

2.8 Analysis of Algorithms 41
2.8.1 Efficiency of an Algorithm 42
2.9 Simple Examples of the Algorithm 43
2.10 Pseudo Code 44
2.11 Flow Charts 46
2.11.1 Types of Flow Charts 47
2.11.2 Advantages of Flowcharts 48
2.11.3 Differences between Flowchart and Algorithm 48
2.11.4 Limitations of Flowcharts 48
2.12 Program Development Steps 50
2.13 Tracing an Algorithm to Depict Logic 51
2.14 Specification for Converting Algorithms into Programs 52
2.15 Additional Algorithms and Flowcharts 53
2.16 Summary 64
2.17 Key Terms 64
2.18 Exercises 65
2.19 Multiple Choice Questions 65

Chapter-3: Basics of 'C'

3.0 Objectives 69
3.1 Introduction of 'C' 69
3.2 Characteristics of 'C' Language 71
3.3 'C' Features 71
3.4 'C' Limitations 72
3.5 Basic Structure of 'C' Program 72
3.6 Writing the First C Program, Comments 75
3.6.1 Compiling and Executing C Programs 76
3.6.2 Syntax and Logical Errors in Compilation 77
3.7 Program Statements 78
3.8 'C' Tokens 79
3.8.1 Keywords 79
3.8.2 Identifiers 80
3.8.3 Constants 80
3.8.4 Escape Sequences 82
3.8.5 Special Symbols 82
3.8.6 'C' Operators 83
3.8.7 Variables 83

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3.9 Basic Data Types in C 88
3.10 Operators 91
3.10.1 Arithmetic Operators 92
3.10.2 Relational Operators 94
3.10.3 Logical Operators 95
3.10.4 Assignment Operators 98
3.10.5 Increment and Decrement Operators 101
3.10.6 Conditional Operators 103
3.10.7 Bitwise Operators 104
3.10.8 Special Operators 109
3.11 Expressions and Evaluation 112
3.12 Precedence and Associativity 115
3.13 Type Conversions 119
3.14 Type Casting 120
3.15 Input and Output Functions 124
3.15.1 Formatted Input and Output Functions 124
3.15.2 Non-formatted Input and Output Functions 126
3.16 Additional Programs 128
3.17 Common Programming Errors 131
3.17 Summary 139
3.18 Key Terms 139
3.19 Exercises 141
3.20 Multiple Choice Questions 142

Chapter-4: Control Statements

4.0 Objectives 149
4.1 Introduction 149
4.2 Statements 150
4.3 Decision Making (or) Conditional Statements 150
4.3.1 if, if-else, nested if, nested if-else and else if Statements 151
4.3.1.1 if Statement (One-Way (if) Selection) 151
4.3.1.2 if....else Statement (Two-way selection) 153
4.3.1.3 Nested if Statements 154
4.3.1.4 else-if Statement 155
4.3.1.5 Dangling else Problem 157
4.3.1.6 nested if-else Statements 158
4.3.2 Multiway Selection: switch case Statements 160

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Guntur (Dist.) A.P.

4.4 Repetition 163
4.4.1 Concept of Loop 163
4.5 Looping Statements 164
4.5.1 while Loop/while Statements 164
4.5.2 do-while Loop/do-while Statements 166
4.5.3 for Loop/for Statements 168
4.5.4 Use of Comma Operator in for Loop 170
4.6 Nested Loops 172
4.7 Special Control Statement 177
4.7.1 goto Statement 177
4.7.2 break Statement 179
4.7.3 continue Statement 180
4.7.4 Return Statement 182
4.7.5 exit Statement 183
4.7.6 Difference between break and continue Statements 184
4.7.7 null Statement 185
4.8 Applications of Loops 185
4.9 Additional Programs 186
4.10 Factoring Methods 189
4.11 Common Programming Errors 194
4.12 Additional Gate Questions 204
4.13 Summary 206
4.14 Key Terms 206
4.15 Exercises 206
4.16 Multiple Choice Questions 207

Chapter-5: Arrays and Strings

5.0 Objectives 219
5.1 Introduction 220
5.2 Arrays Concepts 220
5.2.1 Declaration of Arrays 222
5.2.2 Initialization of Arrays 224
5.2.3 Accessing Array Elements 226
5.2.4 Storing Array Elements 228
5.3 Calculating the Length of the Array 229
5.4 Using Arrays in C 230
5.5 Types of Arrays 232

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5.5.1 One Dimensional Array 232
5.5.2 Two Dimensional Arrays 235
5.5.3 Multi Dimensional Arrays 238
5.5.4 Comparison of Single Dimensional and Multi Dimensional Arrays 240
5.6 Examples of Two Dimensional Arrays 242
5.6.1 Addition of Arrays 242
5.6.2 Subtraction of Arrays 243
5.6.3 Multiplication of Arrays 244
5.7 Sparse Matrices 248
5.8 Common Programming Errors 251
5.9 Strings 253
5.10 String Header or 'C' Library Functions for Strings 255
5.11 'C' Strings 256
5.12 Handling Strings as Array of Characters 257
5.13 String Input/Output Functions 258
5.14 String Handling/Manipulation Functions 261
5.15 String/Data Conversion 267
5.16 Miscellaneous String Functions 269
5.17 Arrays of Strings 270
5.18 Additional Examples 273
5.19 Common Programming Errors 279
5.20 Summary 281
5.21 Key Terms 281
5.22 Exercises 282
5.23 Multiple Choice Questions 283

Chapter-6: Functions

6.0 Objectives 291
6.1 Introduction 292
6.2 Designing Structured Programs 292
6.3 Concepts of Function 292
6.3.1 Purpose of Function 294
6.4 Functions in C 294
6.4.1 Function Prototype Declaration 294
6.4.2 Function Definition 294
6.4.3 Function Calling 296
6.4.4 Defining and Accessing of Functions 297

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6.4.5 Return Statement 297
6.4.6 Characteristics of Function 298
6.5 Passing Arguments (or) Passing Parameters 299
6.5.1 Formal Parameters and Actual Parameters 300
6.5.2 Mechanism of Passing Parameters 301
6.5.3 Differences between Call-by-Value and Call-by-reference 303
6.5.4 Passing Variable Number of Arguments to a Function 305
6.6 Void Functions 306
6.7 Function Invocation and Function Execution 306
6.8 Nesting of Functions 307
6.9 User Defined Functions 308
6.9.1 Functions with no Arguments and no Return Values (no communication) 309
6.9.2 Functions with Arguments but no Return Values (one way communication) 310
6.9.3 Functions with no Arguments and Return Values 312
6.9.4 Functions with Arguments and Return Values(two way communication) 312
6.10 Standard/Library Functions 315
6.10.1 Built–in Functions 317
6.11 Static Functions 319
6.12 Scope of Variables 320
6.12.1 Scope Rules 320
6.13 Storage Classes 323
6.13.1 Auto Storage Class 324
6.13.2 Extern Storage Class 324
6.13.3 Register Storage Class 325
6.13.4 Static Storage Class 325
6.13.5 Comparison of Different Storage Class Variables 326
6.14 Passing Arrays to Functions 329
6.15 Inter Function communication 330
6.16 Type Qualifiers 332
6.17 Recursion 334
6.17.1 Recursive Functions 334
6.17.2 Advantages of Recursion 335
6.17.3 Limitations of Recursion 335
6.17.4 Types of Recursion 338
6.18 Towers of Hanoi 341
6.19 Recursion VS Iteration 345

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(AUTONOMOUS)
NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

6.20 User Defined Functions 345
6.20.1 Introduction 345
6.20.2 Need for User Defined Functions 345
6.20.3 Return Values and Their Types 346
6.20.4 Functions Returning Non-integers 347
6.21 Additional Programs 348
6.22 Tips and Programming Errors 351
6.23 Solved Gate Questions 355
6.24 Summary 365
6.25 Key Terms 366
6.26 Exercises 366
6.27 Multiple Choice Questions 367

Chapter-7: Pointers

7.0 Objectives 379
7.1 Introduction 379
7.2 Pointers 380
7.2.1 Declaring Pointer Variables 380
7.2.2 Assigning Pointers 381
7.2.3 Initialization of a Pointer 382
7.2.4 Accessing Pointer's Contents 383
7.3 Address and Indirection Operator 384
7.4 Uses of Pointers 385
7.5 Disadvantages of Pointers 385
7.6 Arrays and Pointers 385
7.6.1 Relationship between Pointers and Arrays 389
7.7 Array of Pointers 389
7.8 Dynamic Memory Allocation 391
7.8.1 Dynamic Allocation of Arrays 394
7.9 Operations on Pointers 396
7.10 Pointers to Pointers 402
7.11 Null Pointers 404
7.12 Pointers for inter Function Communication 405
7.13 Pointers and Strings 406
7.14 Dangling Pointer 408
7.15 Pointer to Array 408
7.16 Passing Pointers as Arguments to Functions 409

IQAC
Principal
NARASARAOPETA ENGINEERING COLLEGE
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NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

7.17 Pointers to Functions 411
7.17.1 Function Returning a Pointer 412
7.18 Type void pointers 414
7.19 Difference between Array Name and Pointer 415
7.20 Additional Programs 416
7.21 Common Programming Errors 418
7.22 Solved Gate Questions 421
7.23 Summary 426
7.24 Key Terms 426
7.25 Exercises 427
7.26 Multiple Choice Questions 427

Chapter-8: Structures and Unions

8.0 Objectives 435
8.1 Introduction 436
8.2 Declaring a Structure and its Members 436
8.2.1 The Type Definition (typedef) 437
8.3 Initialization of a Structure 438
8.4 Accessing Members of a Structure 439
8.5 Assigning Values/Operations on Structures 440
8.6 Size of a Structure 441
8.6.1 Using Sizeof Operator 442
8.6.2 Without Using Sizeof Operator 442
8.7 Array of Structures 443
8.8 Differences between Arrays and Structure 446
8.9 Nested Structures 447
8.10 Structures and Functions 448
8.11 Self-referential Structures 450
8.12 Table Lookup 453
8.13 Structures and Pointers 455
8.13.1 Pointers to Structures 455
8.13.2 Pointers as Structure Members 457
8.13.3 Passing Structure Pointer as an Argument to a Function 459
8.14 Structures Containing Arrays 460
8.15 Bit Fields 464
8.16 Introduction to Unions 465
8.17 Unions VS Structures 469

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8.18 Enumerated Data Types 469
8.19 Additional Programs 470
8.20 Programming Errors 475
8.21 Summary 476
8.22 Key Terms 476
8.23 Exercises 477
8.24 Multiple Choice Questions 478

Chapter-9: File Handling in C

9.0 Objectives 483
9.1 Introduction 484
9.2 Using Files in C 484
9.3 Classification of Files 485
9.3.1 Differences between Text and Binary Files 486
9.4 File Structure 486
9.5 Streams 487
9.6 File Operations 488
9.6.1 Opening File 489
9.6.2 Reading File 491
9.6.3 Writing to a File 491
9.6.4 Closing Files 492
9.6.5 State of File 494
9.6.6 Appending Data to Existing Files 494
9.7 Standard Library Input/Output Functions for Files 495
9.8 Formatted File I/O Functions 497
9.9 Character Oriented Functions 500
9.10 File Handling in C 504
9.11 Concept of Binary files 505
9.12 Using Binary Files 506
9.12.1 State of a File 506
9.12.2 Opening Binary Files 507
9.12.3 Update Mode 507
9.12.4 Closing Binary Files 508
9.13 Standard Library Functions for Files 508
9.13.1 Block Input and Output Functions 508
9.13.2 File Status Functions 511
9.13.3 Positioning Functions 513

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NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

9.13.4 System File Operations 514
9.14 Accepting Command Line Arguments 516
9.15 Files of Records, Random Access to Files of Records 517
9.16 Converting File Type 519
9.17 Additional Programs 524
9.18 Programming Errors 528
9.19 Summary 531
9.20 Exercise 531
9.21 Multiple Choice Questions 532

Chapter-10: Additional Features of 'C'

10.0 Objectives 537
10.1 Preprocessor Commands 537
10.2 Macros 543
10.3 Command-Line Arguments 549
10.4 Variable-Length Argument Lists 552
10.5 Error Handling-stderr and Exit 552
10.6 Programming Errors 553
10.7 Summary 557
10.8 Exercise 555
10.9 Multiple Choice Questions 555

Chapter-11: Searching and Sorting

11.0 Objectives 557
11.1 Introduction 557
11.2 Searching 558
11.2.1 Linear Search 558
11.2.2 Binary Search 562
11.3 Sorting 568
11.3.1 Bubble Sort 569
11.3.2 Selection Sort 572
11.3.3 Insertion Sort 575
11.3.4 Comparison of Various Sorting Algorithms 579
11.4 Summary 581
11.5 Key Terms 581
11.6 Exercises 582
11.7 Multiple Choice Questions 582

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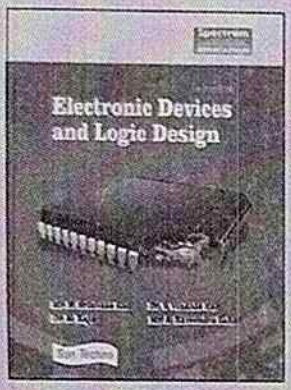

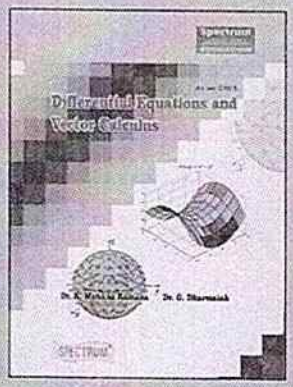

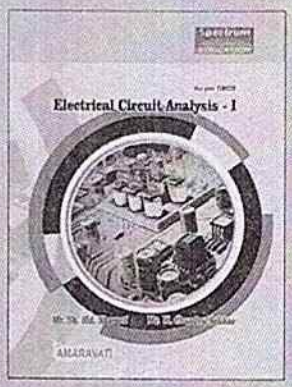

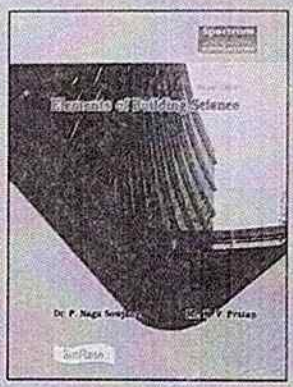

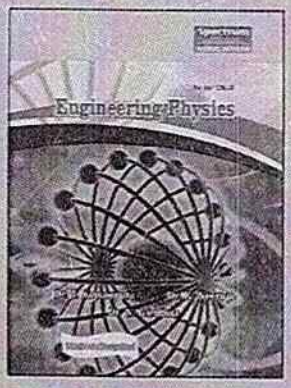

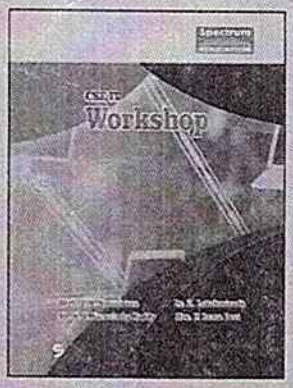

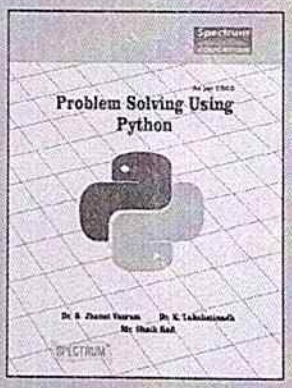

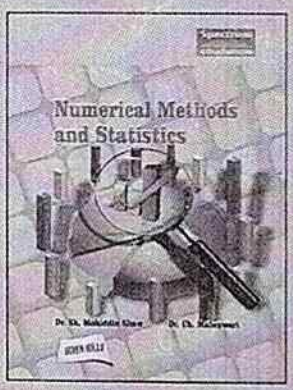

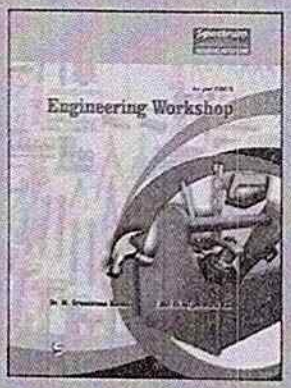

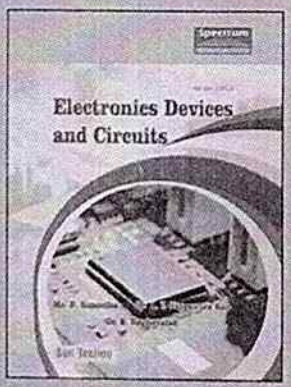

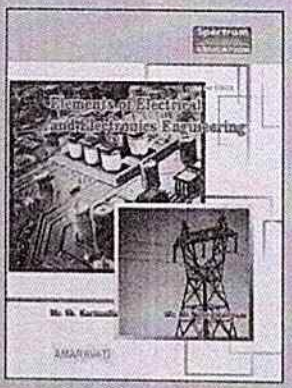

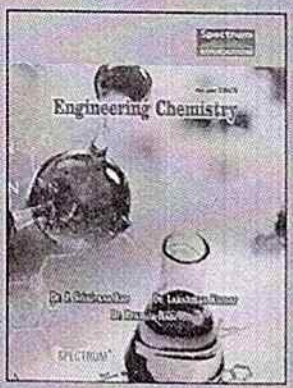

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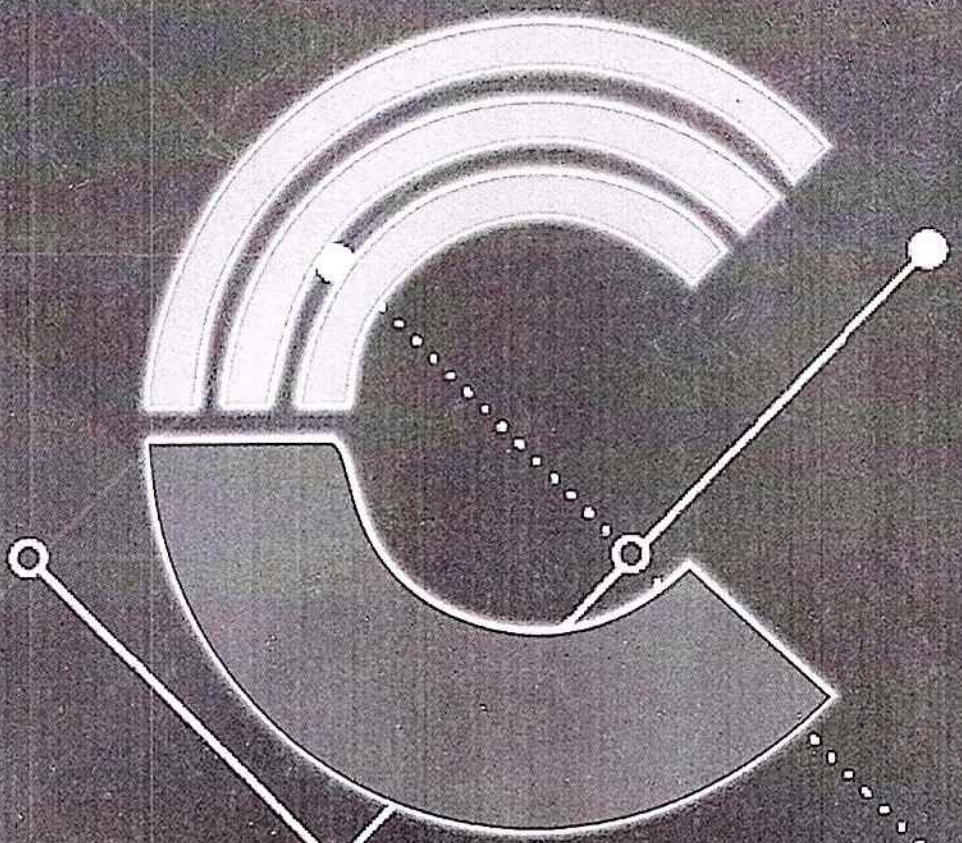

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Problem Solving using 'C'

Authors

Dr. S. V. N. Sreenivasu
Professor
Department of Computer Science & Engineering
Narasaraopeta Engineering College(Autonomous)
Narasaraopet, Guntur - 522 601, A.P.

Dr. S. Siva Nageswara Rao
Professor
Department of Computer Science & Engineering
Narasaraopeta Engineering College(Autonomous)
Narasaraopet, Guntur - 522 601, A.P.

Dr. M. Venkata Reddy
Associate Professor
Department of Computer Science & Engineering
Narasaraopeta Engineering College(Autonomous)
Narasaraopet, Guntur - 522 601, A.P.

Dr. S. N. Thirumala Rao
Professor
Department of Computer Science & Engineering
Narasaraopeta Engineering College(Autonomous)
Narasaraopet, Guntur - 522 601, A.P.

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Chapter-1: Introduction to Computers

1.0	Objectives	1
1.1	Introduction	1
1.2	Classification of Computers	2
1.3	Overview of a Computer	3
1.4	Components of a Computer	5
1.5	Computing Environments	13
1.6	Introduction to OS	17
	1.6.1 Classification of Operating System	17
	1.6.2 Purpose of Operating System	18
	1.6.3 Functions of Operating System	18
1.7	Classification of Programming Languages	19
1.8	Creating and Running Programs	22
1.9	Number System	23
	1.9.1 Binary, Decimal, Hexadecimal and Octal Conversions	26
1.10	Storing Integers	28
	1.10.1 Storing Real Numbers	29
1.11	Summary	30
1.12	Key Terms	31
1.13	Exercises	31
1.14	Multiple Choice Questions	32

Chapter-2: Problem Solving and Algorthms

2.0	Objectives	35
2.1	Introduction to Algorithms	35
2.2	Problem Solving	36
	2.2.1 Steps Involved in Solving Logical and Numerical Problems	37
2.3	Characteristics of an Algorithm	37
2.4	Strategy for Designing Algorithms	39
2.5	Different Ways of Stating Algorithms	40
	2.5.1 Step-form, Pseudo-code, Flowchart	40
2.6	Structured Programming Concept	40
2.7	Implementation of Algorithms	41

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NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

2.8 Analysis of Algorithms 41
2.8.1 Efficiency of an Algorithm 42
2.9 Simple Examples of the Algorithm 43
2.10 Pseudo Code 44
2.11 Flow Charts 46
2.11.1 Types of Flow Charts 47
2.11.2 Advantages of Flowcharts 48
2.11.3 Differences between Flowchart and Algorithm 48
2.11.4 Limitations of Flowcharts 48
2.12 Program Development Steps 50
2.13 Tracing an Algorithm to Depict Logic 51
2.14 Specification for Converting Algorithms into Programs 52
2.15 Additional Algorithms and Flowcharts 53
2.16 Summary 64
2.17 Key Terms 64
2.18 Exercises 65
2.19 Multiple Choice Questions 65

Chapter-3: Basics of 'C'

3.0 Objectives 69
3.1 Introduction of 'C' 69
3.2 Characteristics of 'C' Language 71
3.3 'C' Features 71
3.4 'C' Limitations 72
3.5 Basic Structure of 'C' Program 72
3.6 Writing the First C Program, Comments 75
3.6.1 Compiling and Executing C Programs 76
3.6.2 Syntax and Logical Errors in Compilation 77
3.7 Program Statements 78
3.8 'C' Tokens 79
3.8.1 Keywords 79
3.8.2 Identifiers 80
3.8.3 Constants 80
3.8.4 Escape Sequences 82
3.8.5 Special Symbols 82
3.8.6 'C' Operators 83
3.8.7 Variables 83

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(AUTONOMOUS)
NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

3.9 Basic Data Types in C 88
3.10 Operators 91
3.10.1 Arithmetic Operators 92
3.10.2 Relational Operators 94
3.10.3 Logical Operators 95
3.10.4 Assignment Operators 98
3.10.5 Increment and Decrement Operators 101
3.10.6 Conditional Operators 103
3.10.7 Bitwise Operators 104
3.10.8 Special Operators 109
3.11 Expressions and Evaluation 112
3.12 Precedence and Associativity 115
3.13 Type Conversions 119
3.14 Type Casting 120
3.15 Input and Output Functions 124
3.15.1 Formatted Input and Output Functions 124
3.15.2 Non-formatted Input and Output Functions 126
3.16 Additional Programs 128
3.17 Common Programming Errors 131
3.17 Summary 139
3.18 Key Terms 139
3.19 Exercises 141
3.20 Multiple Choice Questions 142

Chapter-4: Control Statements

4.0 Objectives 149
4.1 Introduction 149
4.2 Statements 150
4.3 Decision Making (or) Conditional Statements 150
4.3.1 if, if-else, nested if, nested if-else and else if Statements 151
4.3.1.1 if Statement (One-Way (if) Selection) 151
4.3.1.2 if....else Statement (Two-way selection) 153
4.3.1.3 Nested if Statements 154
4.3.1.4 else-if Statement 155
4.3.1.5 Dangling else Problem 157
4.3.1.6 nested if-else Statements 158
4.3.2 Multiway Selection: switch case Statements 160

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(AUTONOMOUS)
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Guntur (Dist.), A.P.

4.4 Repetition 163
4.4.1 Concept of Loop 163
4.5 Looping Statements 164
4.5.1 while Loop/while Statements 164
4.5.2 do-while Loop/do-while Statements 166
4.5.3 for Loop/for Statements 168
4.5.4 Use of Comma Operator in for Loop 170
4.6 Nested Loops 172
4.7 Special Control Statement 177
4.7.1 goto Statement 177
4.7.2 break Statement 179
4.7.3 continue Statement 180
4.7.4 Return Statement 182
4.7.5 exit Statement 183
4.7.6 Difference between break and continue Statements 184
4.7.7 null Statement 185
4.8 Applications of Loops 185
4.9 Additional Programs 186
4.10 Factoring Methods 189
4.11 Common Programming Errors 194
4.12 Additional Gate Questions 204
4.13 Summary 206
4.14 Key Terms 206
4.15 Exercises 206
4.16 Multiple Choice Questions 207

Chapter-5: Arrays and Strings

5.0 Objectives 219
5.1 Introduction 220
5.2 Arrays Concepts 220
5.2.1 Declaration of Arrays 222
5.2.2 Initialization of Arrays 224
5.2.3 Accessing Array Elements 226
5.2.4 Storing Array Elements 228
5.3 Calculating the Length of the Array 229
5.4 Using Arrays in C 230
5.5 Types of Arrays 232

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(AUTONOMOUS)
NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

5.5.1 One Dimensional Array 232
5.5.2 Two Dimensional Arrays 235
5.5.3 Multi Dimensional Arrays 238
5.5.4 Comparison of Single Dimensional and Multi Dimensional Arrays 240
5.6 Examples of Two Dimensional Arrays 242
5.6.1 Addition of Arrays 242
5.6.2 Subtraction of Arrays 243
5.6.3 Multiplication of Arrays 244
5.7 Sparse Matrices 248
5.8 Common Programming Errors 251
5.9 Strings 253
5.10 String Header or 'C' Library Functions for Strings 255
5.11 'C' Strings 256
5.12 Handling Strings as Array of Characters 257
5.13 String Input/Output Functions 258
5.14 String Handling/Manipulation Functions 261
5.15 String/Data Conversion 267
5.16 Miscellaneous String Functions 269
5.17 Arrays of Strings 270
5.18 Additional Examples 273
5.19 Common Programming Errors 279
5.20 Summary 281
5.21 Key Terms 281
5.22 Exercises 282
5.23 Multiple Choice Questions 283

Chapter-6: Functions

6.0 Objectives 291
6.1 Introduction 292
6.2 Designing Structured Programs 292
6.3 Concepts of Function 292
6.3.1 Purpose of Function 294
6.4 Functions in C 294
6.4.1 Function Prototype Declaration 294
6.4.2 Function Definition 294
6.4.3 Function Calling 296
6.4.4 Defining and Accessing of Functions 297

Principal
NARASARAOPETA ENGINEERING COLLEGE
(AUTONOMOUS)
NARASARAOPET - 522 601
Guntur (Dist.), A.P.

6.4.5 Return Statement 297
6.4.6 Characteristics of Function 298
6.5 Passing Arguments (or) Passing Parameters 299
6.5.1 Formal Parameters and Actual Parameters 300
6.5.2 Mechanism of Passing Parameters 301
6.5.3 Differences between Call-by-Value and Call-by-reference 303
6.5.4 Passing Variable Number of Arguments to a Function 305
6.6 Void Functions 306
6.7 Function Invocation and Function Execution 306
6.8 Nesting of Functions 307
6.9 User Defined Functions 308
6.9.1 Functions with no Arguments and no Return Values (no communication) 309
6.9.2 Functions with Arguments but no Return Values (one way communication) 310
6.9.3 Functions with no Arguments and Return Values 312
6.9.4 Functions with Arguments and Return Values(two way communication) 312
6.10 Standard/Library Functions 315
6.10.1 Built–in Functions 317
6.11 Static Functions 319
6.12 Scope of Variables 320
6.12.1 Scope Rules 320
6.13 Storage Classes 323
6.13.1 Auto Storage Class 324
6.13.2 Extern Storage Class 324
6.13.3 Register Storage Class 325
6.13.4 Static Storage Class 325
6.13.5 Comparison of Different Storage Class Variables 326
6.14 Passing Arrays to Functions 329
6.15 Inter Function communication 330
6.16 Type Qualifiers 332
6.17 Recursion 334
6.17.1 Recursive Functions 334
6.17.2 Advantages of Recursion 335
6.17.3 Limitations of Recursion 335
6.17.4 Types of Recursion 338
6.18 Towers of Hanoi 341
6.19 Recursion VS Iteration 345

IQAC
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NARASARAOPETA ENGINEERING COLLEGE
(AUTONOMOUS)
NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

6.20 User Defined Functions 345
6.20.1 Introduction 345
6.20.2 Need for User Defined Functions 345
6.20.3 Return Values and Their Types 346
6.20.4 Functions Returning Non-integers 347
6.21 Additional Programs 348
6.22 Tips and Programming Errors 351
6.23 Solved Gate Questions 355
6.24 Summary 365
6.25 Key Terms 366
6.26 Exercises 366
6.27 Multiple Choice Questions 367

Chapter-7: Pointers

7.0 Objectives 379
7.1 Introduction 379
7.2 Pointers 380
7.2.1 Declaring Pointer Variables 380
7.2.2 Assigning Pointers 381
7.2.3 Initialization of a Pointer 382
7.2.4 Accessing Pointer's Contents 383
7.3 Address and Indirection Operator 384
7.4 Uses of Pointers 385
7.5 Disadvantages of Pointers 385
7.6 Arrays and Pointers 385
7.6.1 Relationship between Pointers and Arrays 389
7.7 Array of Pointers 389
7.8 Dynamic Memory Allocation 391
7.8.1 Dynamic Allocation of Arrays 394
7.9 Operations on Pointers 396
7.10 Pointers to Pointers 402
7.11 Null Pointers 404
7.12 Pointers for inter Function Communication 405
7.13 Pointers and Strings 406
7.14 Dangling Pointer 408
7.15 Pointer to Array 408
7.16 Passing Pointers as Arguments to Functions 409

IQAC
Principal
NARASARAOPETA ENGINEERING COLLEGE
(AUTONOMOUS)
NARASARAOPET - 522 601
Guntur (Dist.), A.P.

7.17 Pointers to Functions 411
7.17.1 Function Returning a Pointer 412
7.18 Type void pointers 414
7.19 Difference between Array Name and Pointer 415
7.20 Additional Programs 416
7.21 Common Programming Errors 418
7.22 Solved Gate Questions 421
7.23 Summary 426
7.24 Key Terms 426
7.25 Exercises 427
7.26 Multiple Choice Questions 427

Chapter-8: Structures and Unions

8.0 Objectives 435
8.1 Introduction 436
8.2 Declaring a Structure and its Members 436
8.2.1 The Type Definition (typedef) 437
8.3 Initialization of a Structure 438
8.4 Accessing Members of a Structure 439
8.5 Assigning Values/Operations on Structures 440
8.6 Size of a Structure 441
8.6.1 Using Sizeof Operator 442
8.6.2 Without Using Sizeof Operator 442
8.7 Array of Structures 443
8.8 Differences between Arrays and Structure 446
8.9 Nested Structures 447
8.10 Structures and Functions 448
8.11 Self-referential Structures 450
8.12 Table Lookup 453
8.13 Structures and Pointers 455
8.13.1 Pointers to Structures 455
8.13.2 Pointers as Structure Members 457
8.13.3 Passing Structure Pointer as an Argument to a Function 459
8.14 Structures Containing Arrays 460
8.15 Bit Fields 464
8.16 Introduction to Unions 465
8.17 Unions VS Structures 469

IQAC

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NARASARAOPETA ENGINEERING COLLEGE
(AUTONOMOUS)
NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

8.18 Enumerated Data Types 469
8.19 Additional Programs 470
8.20 Programming Errors 475
8.21 Summary 476
8.22 Key Terms 476
8.23 Exercises 477
8.24 Multiple Choice Questions 478

Chapter-9: File Handling in C

9.0 Objectives 483
9.1 Introduction 484
9.2 Using Files in C 484
9.3 Classification of Files 485
9.3.1 Differences between Text and Binary Files 486
9.4 File Structure 486
9.5 Streams 487
9.6 File Operations 488
9.6.1 Opening File 489
9.6.2 Reading File 491
9.6.3 Writing to a File 491
9.6.4 Closing Files 492
9.6.5 State of File 494
9.6.6 Appending Data to Existing Files 494
9.7 Standard Library Input/Output Functions for Files 495
9.8 Formatted File I/O Functions 497
9.9 Character Oriented Functions 500
9.10 File Handling in C 504
9.11 Concept of Binary files 505
9.12 Using Binary Files 506
9.12.1 State of a File 506
9.12.2 Opening Binary Files 507
9.12.3 Update Mode 507
9.12.4 Closing Binary Files 508
9.13 Standard Library Functions for Files 508
9.13.1 Block Input and Output Functions 508
9.13.2 File Status Functions 511
9.13.3 Positioning Functions 513

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(AUTONOMOUS)
NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

9.13.4 System File Operations 514
9.14 Accepting Command Line Arguments 516
9.15 Files of Records, Random Access to Files of Records 517
9.16 Converting File Type 519
9.17 Additional Programs 524
9.18 Programming Errors 528
9.19 Summary 531
9.20 Exercise 531
9.21 Multiple Choice Questions 532

Chapter-10: Additional Features of 'C'

10.0 Objectives 537
10.1 Preprocessor Commands 537
10.2 Macros 543
10.3 Command-Line Arguments 549
10.4 Variable-Length Argument Lists 552
10.5 Error Handling-stderr and Exit 552
10.6 Programming Errors 553
10.7 Summary 557
10.8 Exercise 555
10.9 Multiple Choice Questions 555

Chapter-11: Searching and Sorting

11.0 Objectives 557
11.1 Introduction 557
11.2 Searching 558
11.2.1 Linear Search 558
11.2.2 Binary Search 562
11.3 Sorting 568
11.3.1 Bubble Sort 569
11.3.2 Selection Sort 572
11.3.3 Insertion Sort 575
11.3.4 Comparison of Various Sorting Algorithms 579
11.4 Summary 581
11.5 Key Terms 581
11.6 Exercises 582
11.7 Multiple Choice Questions 582

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Problem Solving using 'C'

Dr. S. V. N. Sreenivasu
Dr. S. Siva Nageswara Rao
Dr. M. Venkata Reddy
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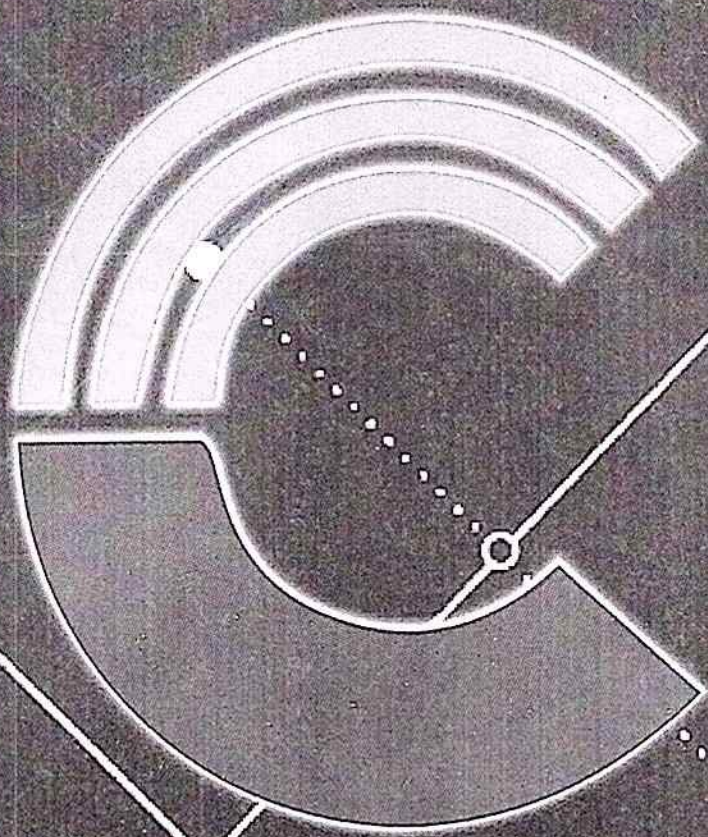

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Authors

Dr. S. V. N. Sreenivasu
Professor
Department of Computer Science & Engineering
Narasaraopeta Engineering College(Autonomous)
Narasaraopet, Guntur - 522 601, A.P.

Dr. S. Siva Nageswara Rao
Professor
Department of Computer Science & Engineering
Narasaraopeta Engineering College(Autonomous)
Narasaraopet, Guntur - 522 601, A.P.

Dr. M. Venkata Reddy
Associate Professor
Department of Computer Science & Engineering
Narasaraopeta Engineering College(Autonomous)
Narasaraopet, Guntur - 522 601, A.P.

Dr. S. N. Thirumala Rao
Professor
Department of Computer Science & Engineering
Narasaraopeta Engineering College(Autonomous)
Narasaraopet, Guntur - 522 601, A.P.

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P.No:+91 40 23710657, 238000657 Fax: +91 40 23810657

Reg. Off

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Chapter-1: Introduction to Computers

1.0	Objectives	1
1.1	Introduction	1
1.2	Classification of Computers	2
1.3	Overview of a Computer	3
1.4	Components of a Computer	5
1.5	Computing Environments	13
1.6	Introduction to OS	17
	1.6.1 Classification of Operating System	17
	1.6.2 Purpose of Operating System	18
	1.6.3 Functions of Operating System	18
1.7	Classification of Programming Languages	19
1.8	Creating and Running Programs	22
1.9	Number System	23
	1.9.1 Binary, Decimal, Hexadecimal and Octal Conversions	26
1.10	Storing Integers	28
	1.10.1 Storing Real Numbers	29
1.11	Summary	30
1.12	Key Terms	31
1.13	Exercises	31
1.14	Multiple Choice Questions	32

Chapter-2: Problem Solving and Algorithms

2.0	Objectives	35
2.1	Introduction to Algorithms	35
2.2	Problem Solving	36
	2.2.1 Steps Involved in Solving Logical and Numerical Problems	37
2.3	Characteristics of an Algorithm	37
2.4	Strategy for Designing Algorithms	39
2.5	Different Ways of Stating Algorithms	40
	2.5.1 Step-form, Pseudo-code, Flowchart	40
2.6	Structured Programming Concept	40
2.7	Implementation of Algorithms	41

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Principal
NARASARAOPETA ENGINEERING COLLEGE
(AUTONOMOUS)
NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

2.8 Analysis of Algorithms 41
2.8.1 Efficiency of an Algorithm 42
2.9 Simple Examples of the Algorithm 43
2.10 Pseudo Code 44
2.11 Flow Charts 46
2.11.1 Types of Flow Charts 47
2.11.2 Advantages of Flowcharts 48
2.11.3 Differences between Flowchart and Algorithm 48
2.11.4 Limitations of Flowcharts 48
2.12 Program Development Steps 50
2.13 Tracing an Algorithm to Depict Logic 51
2.14 Specification for Converting Algorithms into Programs 52
2.15 Additional Algorithms and Flowcharts 53
2.16 Summary 64
2.17 Key Terms 64
2.18 Exercises 65
2.19 Multiple Choice Questions 65

Chapter-3: Basics of 'C'

3.0 Objectives 69
3.1 Introduction of 'C' 69
3.2 Characteristics of 'C' Language 71
3.3 'C' Features 71
3.4 'C' Limitations 72
3.5 Basic Structure of 'C' Program 72
3.6 Writing the First C Program, Comments 75
3.6.1 Compiling and Executing C Programs 76
3.6.2 Syntax and Logical Errors in Compilation 77
3.7 Program Statements 78
3.8 'C' Tokens 79
3.8.1 Keywords 79
3.8.2 Identifiers 80
3.8.3 Constants 80
3.8.4 Escape Sequences 82
3.8.5 Special Symbols 82
3.8.6 'C' Operators 83
3.8.7 Variables 83

IQAC
Principal
NARASARAOPETA ENGINEERING COLLEGE
(AUTONOMOUS)
NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

3.9 Basic Data Types in C 88
3.10 Operators 91
3.10.1 Arithmetic Operators 92
3.10.2 Relational Operators 94
3.10.3 Logical Operators 95
3.10.4 Assignment Operators 98
3.10.5 Increment and Decrement Operators 101
3.10.6 Conditional Operators 103
3.10.7 Bitwise Operators 104
3.10.8 Special Operators 109
3.11 Expressions and Evaluation 112
3.12 Precedence and Associativity 115
3.13 Type Conversions 119
3.14 Type Casting 120
3.15 Input and Output Functions 124
3.15.1 Formatted Input and Output Functions 124
3.15.2 Non-formatted Input and Output Functions 126
3.16 Additional Programs 128
3.17 Common Programming Errors 131
3.17 Summary 139
3.18 Key Terms 139
3.19 Exercises 141
3.20 Multiple Choice Questions 142

Chapter-4: Control Statements

4.0 Objectives 149
4.1 Introduction 149
4.2 Statements 150
4.3 Decision Making (or) Conditional Statements 150
4.3.1 if, if-else, nested if, nested if-else and else if Statements 151
4.3.1.1 if Statement (One-Way (if) Selection) 151
4.3.1.2 if....else Statement (Two-way selection) 153
4.3.1.3 Nested if Statements 154
4.3.1.4 else-if Statement 155
4.3.1.5 Dangling else Problem 157
4.3.1.6 nested if-else Statements 158
4.3.2 Multiway Selection: switch case Statements 160

Principal
NARASARAOPETA ENGINEERING COLLEGE
(AUTONOMOUS)
NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

IQAC

4.4 Repetition 163
4.4.1 Concept of Loop 163
4.5 Looping Statements 164
4.5.1 while Loop/while Statements 164
4.5.2 do-while Loop/do-while Statements 166
4.5.3 for Loop/for Statements 168
4.5.4 Use of Comma Operator in for Loop 170
4.6 Nested Loops 172
4.7 Special Control Statement 177
4.7.1 goto Statement 177
4.7.2 break Statement 179
4.7.3 continue Statement 180
4.7.4 Return Statement 182
4.7.5 exit Statement 183
4.7.6 Difference between break and continue Statements 184
4.7.7 null Statement 185
4.8 Applications of Loops 185
4.9 Additional Programs 186
4.10 Factoring Methods 189
4.11 Common Programming Errors 194
4.12 Additional Gate Questions 204
4.13 Summary 206
4.14 Key Terms 206
4.15 Exercises 206
4.16 Multiple Choice Questions 207

Chapter-5: Arrays and Strings

5.0 Objectives 219
5.1 Introduction 220
5.2 Arrays Concepts 220
5.2.1 Declaration of Arrays 222
5.2.2 Initialization of Arrays 224
5.2.3 Accessing Array Elements 226
5.2.4 Storing Array Elements 228
5.3 Calculating the Length of the Array 229
5.4 Using Arrays in C 230
5.5 Types of Arrays 232

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(AUTONOMOUS)
NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

5.5.1 One Dimensional Array 232
5.5.2 Two Dimensional Arrays 235
5.5.3 Multi Dimensional Arrays 238
5.5.4 Comparison of Single Dimensional and Multi Dimensional Arrays 240
5.6 Examples of Two Dimensional Arrays 242
5.6.1 Addition of Arrays 242
5.6.2 Subtraction of Arrays 243
5.6.3 Multiplication of Arrays 244
5.7 Sparse Matrices 248
5.8 Common Programming Errors 251
5.9 Strings 253
5.10 String Header or 'C' Library Functions for Strings 255
5.11 'C' Strings 256
5.12 Handling Strings as Array of Characters 257
5.13 String Input/Output Functions 258
5.14 String Handling/Manipulation Functions 261
5.15 String/Data Conversion 267
5.16 Miscellaneous String Functions 269
5.17 Arrays of Strings 270
5.18 Additional Examples 273
5.19 Common Programming Errors 279
5.20 Summary 281
5.21 Key Terms 281
5.22 Exercises 282
5.23 Multiple Choice Questions 283

Chapter-6: Functions

6.0 Objectives 291
6.1 Introduction 292
6.2 Designing Structured Programs 292
6.3 Concepts of Function 292
6.3.1 Purpose of Function 294
6.4 Functions in C 294
6.4.1 Function Prototype Declaration 294
6.4.2 Function Definition 294
6.4.3 Function Calling 296
6.4.4 Defining and Accessing of Functions 297

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NARASARAOPETA ENGINEERING COLLEGE
(AUTONOMOUS)
NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

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	6.4.5 Return Statement	297
	6.4.6 Characteristics of Function	298
6.5	Passing Arguments (or) Passing Parameters	299
	6.5.1 Formal Parameters and Actual Parameters	300
	6.5.2 Mechanism of Passing Parameters	301
	6.5.3 Differences between Call-by-Value and Call-by-reference	303
	6.5.4 Passing Variable Number of Arguments to a Function	305
6.6	Void Functions	306
6.7	Function Invocation and Function Execution	306
6.8	Nesting of Functions	307
6.9	User Defined Functions	308
	6.9.1 Functions with no Arguments and no Return Values (no communication)	309
	6.9.2 Functions with Arguments but no Return Values (one way communication)	310
	6.9.3 Functions with no Arguments and Return Values	312
	6.9.4 Functions with Arguments and Return Values(two way communication)	312
6.10	Standard/Library Functions	315
	6.10.1 Built–in Functions	317
6.11	Static Functions	319
6.12	Scope of Variables	320
	6.12.1 Scope Rules	320
6.13	Storage Classes	323
	6.13.1 Auto Storage Class	324
	6.13.2 Extern Storage Class	324
	6.13.3 Register Storage Class	325
	6.13.4 Static Storage Class	325
	6.13.5 Comparison of Different Storage Class Variables	326
6.14	Passing Arrays to Functions	329
6.15	Inter Function communication	330
6.16	Type Qualifiers	332
6.17	Recursion	334
	6.17.1 Recursive Functions	334
	6.17.2 Advantages of Recursion	335
	6.17.3 Limitations of Recursion	335
	6.17.4 Types of Recursion	338
6.18	Towers of Hanoi	341
6.19	Recursion VS Iteration	345

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NARASARAOPETA ENGINEERING COLLEGE
(AUTONOMOUS)
NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

6.20 User Defined Functions 345
6.20.1 Introduction 345
6.20.2 Need for User Defined Functions 345
6.20.3 Return Values and Their Types 346
6.20.4 Functions Returning Non-integers 347
6.21 Additional Programs 348
6.22 Tips and Programming Errors 351
6.23 Solved Gate Questions 355
6.24 Summary 365
6.25 Key Terms 366
6.26 Exercises 366
6.27 Multiple Choice Questions 367

Chapter-7: Pointers

7.0 Objectives 379
7.1 Introduction 379
7.2 Pointers 380
7.2.1 Declaring Pointer Variables 380
7.2.2 Assigning Pointers 381
7.2.3 Initialization of a Pointer 382
7.2.4 Accessing Pointer's Contents 383
7.3 Address and Indirection Operator 384
7.4 Uses of Pointers 385
7.5 Disadvantages of Pointers 385
7.6 Arrays and Pointers 385
7.6.1 Relationship between Pointers and Arrays 389
7.7 Array of Pointers 389
7.8 Dynamic Memory Allocation 391
7.8.1 Dynamic Allocation of Arrays 394
7.9 Operations on Pointers 396
7.10 Pointers to Pointers 402
7.11 Null Pointers 404
7.12 Pointers for inter Function Communication 405
7.13 Pointers and Strings 406
7.14 Dangling Pointer 408
7.15 Pointer to Array 408
7.16 Passing Pointers as Arguments to Functions 409

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NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

7.17 Pointers to Functions 411
7.17.1 Function Returning a Pointer 412
7.18 Type void pointers 414
7.19 Difference between Array Name and Pointer 415
7.20 Additional Programs 416
7.21 Common Programming Errors 418
7.22 Solved Gate Questions 421
7.23 Summary 426
7.24 Key Terms 426
7.25 Exercises 427
7.26 Multiple Choice Questions 427

Chapter-8: Structures and Unions

8.0 Objectives 435
8.1 Introduction 436
8.2 Declaring a Structure and its Members 436
8.2.1 The Type Definition (typedef) 437
8.3 Initialization of a Structure 438
8.4 Accessing Members of a Structure 439
8.5 Assigning Values/Operations on Structures 440
8.6 Size of a Structure 441
8.6.1 Using Sizeof Operator 442
8.6.2 Without Using Sizeof Operator 442
8.7 Array of Structures 443
8.8 Differences between Arrays and Structure 446
8.9 Nested Structures 447
8.10 Structures and Functions 448
8.11 Self-referential Structures 450
8.12 Table Lookup 453
8.13 Structures and Pointers 455
8.13.1 Pointers to Structures 455
8.13.2 Pointers as Structure Members 457
8.13.3 Passing Structure Pointer as an Argument to a Function 459
8.14 Structures Containing Arrays 460
8.15 Bit Fields 464
8.16 Introduction to Unions 465
8.17 Unions VS Structures 469

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8.18 Enumerated Data Types 469
8.19 Additional Programs 470
8.20 Programming Errors 475
8.21 Summary 476
8.22 Key Terms 476
8.23 Exercises 477
8.24 Multiple Choice Questions 478

Chapter-9: File Handling in C

9.0 Objectives 483
9.1 Introduction 484
9.2 Using Files in C 484
9.3 Classification of Files 485
9.3.1 Differences between Text and Binary Files 486
9.4 File Structure 486
9.5 Streams 487
9.6 File Operations 488
9.6.1 Opening File 489
9.6.2 Reading File 491
9.6.3 Writing to a File 491
9.6.4 Closing Files 492
9.6.5 State of File 494
9.6.6 Appending Data to Existing Files 494
9.7 Standard Library Input/Output Functions for Files 495
9.8 Formatted File I/O Functions 497
9.9 Character Oriented Functions 500
9.10 File Handling in C 504
9.11 Concept of Binary files 505
9.12 Using Binary Files 506
9.12.1 State of a File 506
9.12.2 Opening Binary Files 507
9.12.3 Update Mode 507
9.12.4 Closing Binary Files 508
9.13 Standard Library Functions for Files 508
9.13.1 Block Input and Output Functions 508
9.13.2 File Status Functions 511
9.13.3 Positioning Functions 513

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9.13.4 System File Operations 514
9.14 Accepting Command Line Arguments 516
9.15 Files of Records, Random Access to Files of Records 517
9.16 Converting File Type 519
9.17 Additional Programs 524
9.18 Programming Errors 528
9.19 Summary 531
9.20 Exercise 531
9.21 Multiple Choice Questions 532

Chapter-10: Additional Features of 'C'

10.0 Objectives 537
10.1 Preprocessor Commands 537
10.2 Macros 543
10.3 Command-Line Arguments 549
10.4 Variable-Length Argument Lists 552
10.5 Error Handling-stderr and Exit 552
10.6 Programming Errors 553
10.7 Summary 557
10.8 Exercise 555
10.9 Multiple Choice Questions 555

Chapter-11: Searching and Sorting

11.0 Objectives 557
11.1 Introduction 557
11.2 Searching 558
11.2.1 Linear Search 558
11.2.2 Binary Search 562
11.3 Sorting 568
11.3.1 Bubble Sort 569
11.3.2 Selection Sort 572
11.3.3 Insertion Sort 575
11.3.4 Comparison of Various Sorting Algorithms 579
11.4 Summary 581
11.5 Key Terms 581
11.6 Exercises 582
11.7 Multiple Choice Questions 582

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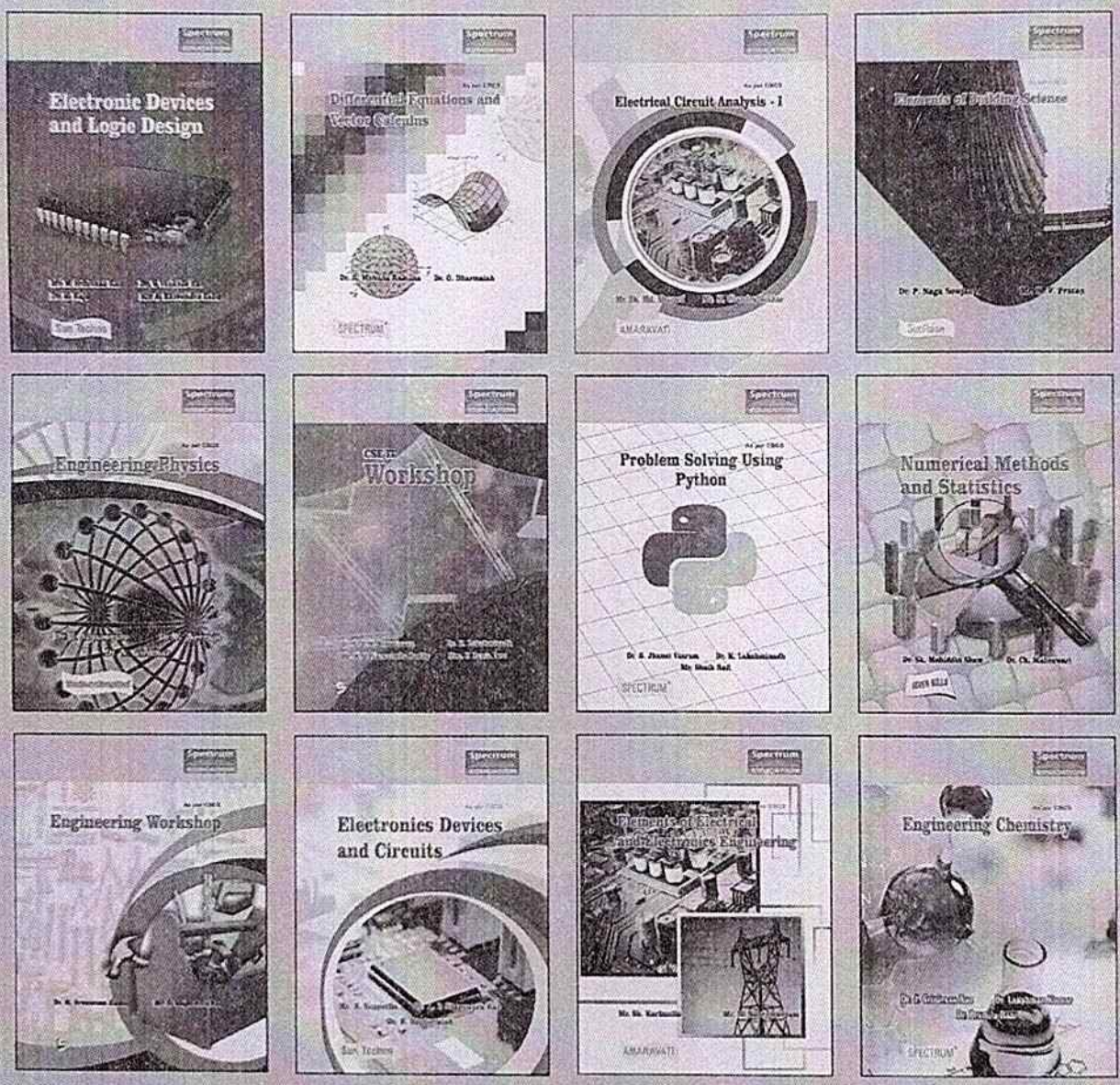

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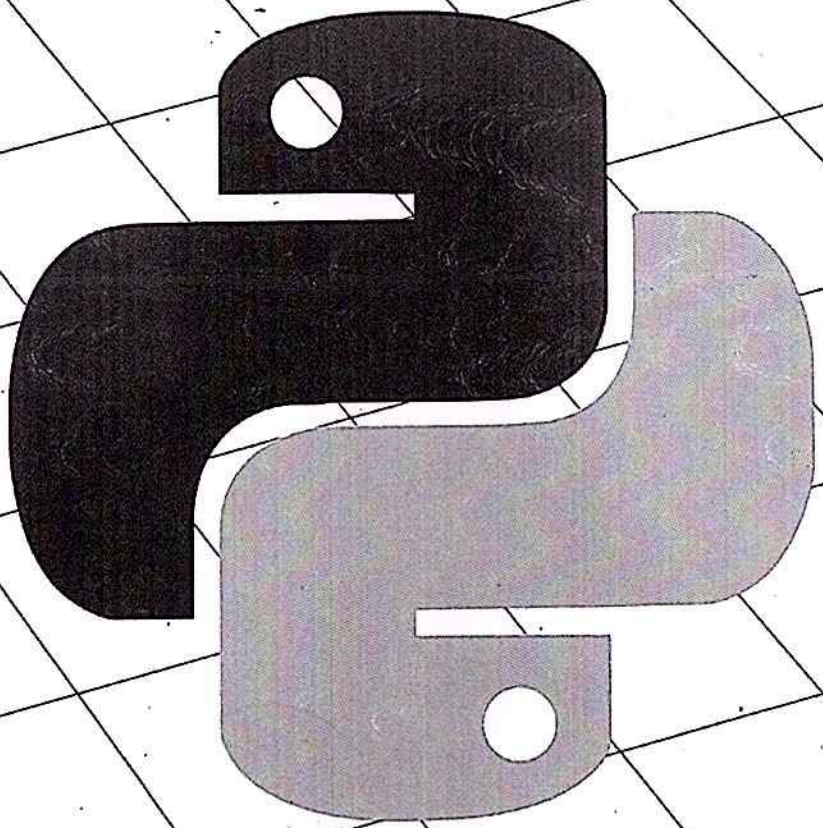

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Authors

Dr. B. Jhansi Vazram
Professor
Department of Computer Science & Engineering
Narasaraopeta Engineering College(Autonomous)
Narasaraopet, Guntur, A.P. - 522 601

Dr. K. Lakshminadh
Professor
Department of Computer Science & Engineering
Narasaraopeta Engineering College(Autonomous)
Narasaraopet, Guntur, A.P. - 522 601

Mr. Shaik. Rafi
Assistant Professor
Department of Computer Science & Engineering
Narasaraopeta Engineering College(Autonomous)
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Problem Solving using Python

Chapter-1: Introduction

1.0	Objectives	1
1.1	Introduction to Python	1
1.2	History of Python Programming Language	2
1.3	Features of Python	3
1.4	Python Advantages and Disadvantages	4
1.5	Real-world Applications of Python	5
1.6	Installing Python	8
1.7	Environment Variables	9
1.8	Setting up Path	9
1.9	Python Interactive Shell	10
1.9.1	Interactive Mode	10
1.9.2	Script Mode	12
1.10	Editing Python Files	12
1.11	Python Virtual Machine	16
1.11.1	Viewing the Byte Code	16
1.12	Python Basics	17
1.12.1	Comments	17
1.12.2	Keywords in Python	18
1.12.3	Variables	19
1.13	Standard Data Types in Python	21
1.13.1	Numbers	22
1.13.2	None	24
1.13.3	Strings	24
1.13.4	Identify Data type of a Variable	25
1.13.5	Check Datatype of a Variable	25
1.13.6	Tuple	26
1.13.7	List	26
1.13.8	Sets	26
1.13.9	Dictionary	27
1.13.10	Type Conversion	27
1.13.11	Mutable and Immutable Data Types in Python	29

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1.14 Operators 29
1.14.1 Arithmetic operators 29
1.14.2 Assignment Operators 32
1.14.3 Comparison Operators (Relational Operators) 32
1.14.4 Logical Operators 35
1.14.5 Bitwise Operators 35
1.14.6 Identity Operators 36
1.14.7 Membership Operators 37
1.15 Expressions 37
1.16 Operator Precedence and Associativity 39
1.17 Indentation 40
1.18 String Operations and Functions 40
1.18.1 Working with Strings 40
1.18.2 String Functions 42
1.19 Math Functions 45
1.20 Input/Ouput Statements 47
1.21 Control Structures 47
1.21.1 Sequential Control Structures 48
1.21.2 Selection/Conditional Statements 48
1.21.3 Iterative Control Structures 51
1.22 Outcomes 53
1.23 Review Questions 53
1.24 Multiple Choice Questions 54

Unit-2: Functions & Event Driven Programming

2.0 Objectives 57
2.1 Introduction to Functions 57
2.2 Function Basics 58
2.2.1 General Form of a Function Definition 59
2.3 Calling Functions 60
2.4 Return Statement 61
2.5 Recursive Functions 62
2.6 Function Arguments 65
2.7 Anonymous Functions or Lambda Functions 67
2.8 Introduction to Event Driven Programming 69
2.8.1 Turtle Graphics 69

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2.8.2 Turtle Barchart 72
2.9 Event driven programming 73
2.9.1 Event 74
2.9.2 Widgets 74
2.10 Event Handlers 76
2.10.1 Keypress Events 76
2.10.2 Mouse Events 78
2.10.3 Timer Events 79
2.11 Example Programs 81
2.12 Outcomes 84
2.13 Review Questions 84
2.14 Multiple Choice Questions 85

Chapter-3: Data Structures

3.0 Objectives 87
3.1 Introduction 87
3.2 List 88
3.2.1 Creation of List 88
3.2.2 Accessing Elements of a List 88
3.2.3 Updating Values in the Lists 89
3.2.4 Del Statement 89
3.2.5 Nested Lists 90
3.2.6 Operations on List 90
3.2.6.1 Slice Operation on a List 90
3.2.6.2 Concatenation 91
3.2.6.3 Repetition of a List 92
3.2.6.4 Membership of List 93
3.2.7 Methods in List 94
3.3 Tuples 99
3.3.1 Creating a Tuple 100
3.3.2 Accessing values in a Tuple 100
3.3.3 Updating Values in Tuples 101
3.3.4 Deleting Elements in Tuple 101
3.3.5 Converting a List into Tuple 102
3.3.6 Basic tuple operations 102
3.3.6.1 Slicing 102

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NARASARAOPETA ENGINEERING
(AUTONOMOUS)
NARASARAOPET - 522 601.
Guntur (Dist.), A.P.

	3.3.6.2 Concatenation	103
	3.3.6.3 Repetition of a Tuple	103
	3.3.6.4 Membership of Tuple	104
	3.3.6.5 Iteration of Tuple	104
	3.3.6.6 Comparison(>,<,==)	105
3.3.7	Tuple Assignment	105
3.3.8	Nested Tuples	106
3.3.9	Tuple Methods	106
3.3.10	Tuple Built - in - Functions	107
3.4	Dictionaries	109
3.4.1	Creating Dictionary	110
3.4.2	Accessing Values in Dictionary	110
3.4.3	Adding and Modifying an Item in Dictionary	110
3.4.4	Deleting Items in Dictionary	111
3.4.5	Nested Dictionaries	111
3.4.6	Built in Dictionary Functions and Methods	111
3.5	Strings	113
3.6	Sets	116
3.6.1	Creating and Accessing the Elements of a Set	117
3.6.2	Set Operations	118
3.6.3	Set Methods	121
3.7	Files	122
3.7.1	Different Access Modes in Files	122
3.7.2	Iterating through Files	123
3.7.3	Reading and Writing Files	124
3.7.4	Deleting Files	126
3.7.5	Python Libraries	126
3.8	Out Comes	127
3.9	Review Questions	127
3.10	Multiple Choice Questions	127
	Chapter-4: OOP	
4.0	Objectives	131
4.1	Introduction	131
4.2	Features of Object Oriented Programming	131
4.3	Class	132

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NARASARAOPET - 522 601.
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4.4 Creating Objects 133
4.5 Methods 135
4.6 Constructors 138
4.7 Inheritance 140
4.7.1 Super( ) method 142
4.7.2 Types of Inheritance 143
4.8 Polymorphism 147
4.8.1 Overloading 148
4.8.2 Operator Overloading 150
4.9 Abstraction 151
4.10 Errors and Exceptions 152
4.10.1 Handling Exceptions 153
4.10.2 Raising Exceptions 157
4.10.3 Instantiating Exceptions 158
4.11 Outcomes 159
4.12 Review Questions 159
4.13 Multiple Choice Questions 159

Chapter-5: Regular Expressions

5.0 Objectives 163
5.1 Introduction 163
5.2 Regular Expressions 163
5.3 Power of Pattern Matching in Regex 164
5.4 Metacharacters in Regular Expression 165
5.4.1 Sequences 166
5.4.2 Characters Class 171
5.4.3 Groups 171
5.5 Pattern Matching 173
5.6 Power of Pattern Searching using Regexp 175
5.7 Real Time Parsing of N/W or System Data using Regex Password Validation 178
5.8 E-Mail Validation using Regular Expression 179
5.9 Example Programs 179
5.10 Outcomes 182
5.11 Review Questions 182
5.12 Multiple Choice Questions 183

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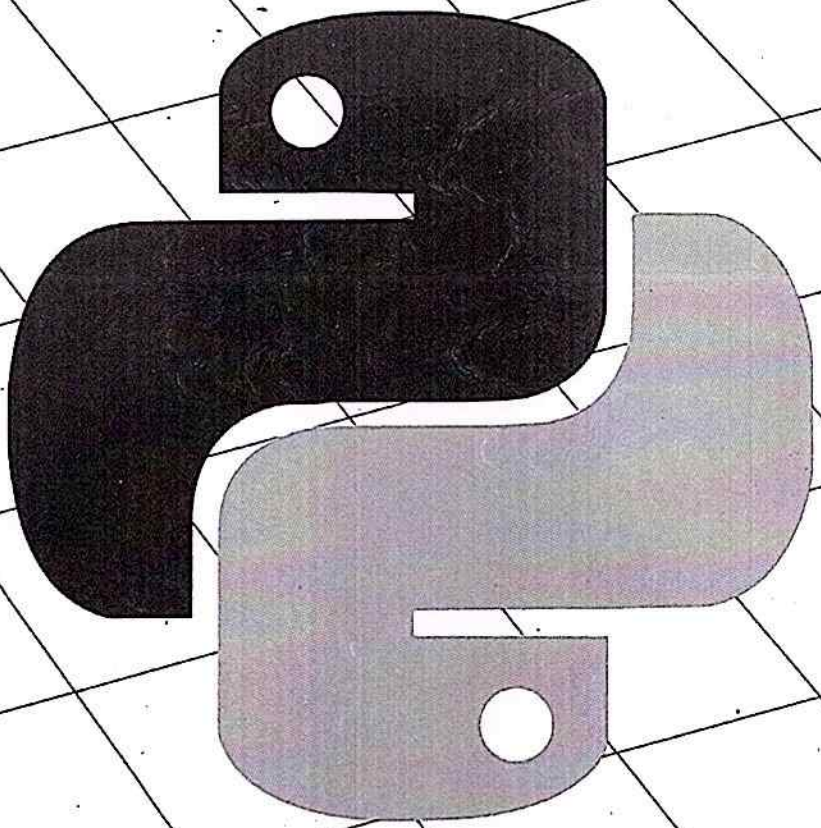

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Authors

Dr. B. Jhansi Vazram
Professor
Department of Computer Science & Engineering
Narasaraopeta Engineering College(Autonomous)
Narasaraopet, Guntur, A.P. - 522 601

Dr. K. Lakshminadh
Professor
Department of Computer Science & Engineering
Narasaraopeta Engineering College(Autonomous)
Narasaraopet, Guntur, A.P. - 522 601

Mr. Shaik. Rafi
Assistant Professor
Department of Computer Science & Engineering
Narasaraopeta Engineering College(Autonomous)
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Chapter-1: Introduction

1.0	Objectives	1
1.1	Introduction to Python	1
1.2	History of Python Programming Language	2
1.3	Features of Python	3
1.4	Python Advantages and Disadvantages	4
1.5	Real-world Applications of Python	5
1.6	Installing Python	8
1.7	Environment Variables	9
1.8	Setting up Path	9
1.9	Python Interactive Shell	10
1.9.1	Interactive Mode	10
1.9.2	Script Mode	12
1.10	Editing Python Files	12
1.11	Python Virtual Machine	16
1.11.1	Viewing the Byte Code	16
1.12	Python Basics	17
1.12.1	Comments	17
1.12.2	Keywords in Python	18
1.12.3	Variables	19
1.13	Standard Data Types in Python	21
1.13.1	Numbers	22
1.13.2	None	24
1.13.3	Strings	24
1.13.4	Identify Data type of a Variable	25
1.13.5	Check Datatype of a Variable	25
1.13.6	Tuple	26
1.13.7	List	26
1.13.8	Sets	26
1.13.9	Dictionary	27
1.13.10	Type Conversion	27
1.13.11	Mutable and Immutable Data Types in Python	29

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1.14 Operators 29
1.14.1 Arithmetic operators 29
1.14.2 Assignment Operators 32
1.14.3 Comparison Operators (Relational Operators) 32
1.14.4 Logical Operators 35
1.14.5 Bitwise Operators 35
1.14.6 Identity Operators 36
1.14.7 Membership Operators 37
1.15 Expressions 37
1.16 Operator Precedence and Associativity 39
1.17 Indentation 40
1.18 String Operations and Functions 40
1.18.1 Working with Strings 40
1.18.2 String Functions 42
1.19 Math Functions 45
1.20 Input/Ouput Statements 47
1.21 Control Structures 47
1.21.1 Sequential Control Structures 48
1.21.2 Selection/Conditional Statements 48
1.21.3 Iterative Control Structures 51
1.22 Outcomes 53
1.23 Review Questions 53
1.24 Multiple Choice Questions 54

Unit-2: Functions & Event Driven Programming

2.0 Objectives 57
2.1 Introduction to Functions 57
2.2 Function Basics 58
2.2.1 General Form of a Function Definition 59
2.3 Calling Functions 60
2.4 Return Statement 61
2.5 Recursive Functions 62
2.6 Function Arguments 65
2.7 Anonymous Functions or Lambda Functions 67
2.8 Introduction to Event Driven Programming 69
2.8.1 Turtle Graphics 69

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2.8.2 Turtle Barchart 72
2.9 Event driven programming 73
2.9.1 Event 74
2.9.2 Widgets 74
2.10 Event Handlers 76
2.10.1 Keypress Events 76
2.10.2 Mouse Events 78
2.10.3 Timer Events 79
2.11 Example Programs 81
2.12 Outcomes 84
2.13 Review Questions 84
2.14 Multiple Choice Questions 85

Chapter-3: Data Structures

3.0 Objectives 87
3.1 Introduction 87
3.2 List 88
3.2.1 Creation of List 88
3.2.2 Accessing Elements of a List 88
3.2.3 Updating Values in the Lists 89
3.2.4 Del Statement 89
3.2.5 Nested Lists 90
3.2.6 Operations on List 90
3.2.6.1 Slice Operation on a List 90
3.2.6.2 Concatenation 91
3.2.6.3 Repetition of a List 92
3.2.6.4 Membership of List 93
3.2.7 Methods in List 94
3.3 Tuples 99
3.3.1 Creating a Tuple 100
3.3.2 Accessing values in a Tuple 100
3.3.3 Updating Values in Tuples 101
3.3.4 Deleting Elements in Tuple 101
3.3.5 Converting a List into Tuple 102
3.3.6 Basic tuple operations 102
3.3.6.1 Slicing 102

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	3.3.6.2 Concatenation	103
	3.3.6.3 Repetition of a Tuple	103
	3.3.6.4 Membership of Tuple	104
	3.3.6.5 Iteration of Tuple	104
	3.3.6.6 Comparison(>,<,==)	105
3.3.7	Tuple Assignment	105
3.3.8	Nested Tuples	106
3.3.9	Tuple Methods	106
3.3.10	Tuple Built - in - Functions	107
3.4	Dictionaries	109
3.4.1	Creating Dictionary	110
3.4.2	Accessing Values in Dictionary	110
3.4.3	Adding and Modifying an Item in Dictionary	110
3.4.4	Deleting Items in Dictionary	111
3.4.5	Nested Dictionaries	111
3.4.6	Built in Dictionary Functions and Methods	111
3.5	Strings	113
3.6	Sets	116
3.6.1	Creating and Accessing the Elements of a Set	117
3.6.2	Set Operations	118
3.6.3	Set Methods	121
3.7	Files	122
3.7.1	Different Access Modes in Files	122
3.7.2	Iterating through Files	123
3.7.3	Reading and Writing Files	124
3.7.4	Deleting Files	126
3.7.5	Python Libraries	126
3.8	Out Comes	127
3.9	Review Questions	127
3.10	Multiple Choice Questions	127

Chapter-4: OOP

4.0	Objectives	131
4.1	Introduction	131
4.2	Features of Object Oriented Programming	131
4.3	Class	132

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4.4 Creating Objects 133
4.5 Methods 135
4.6 Constructors 138
4.7 Inheritance 140
4.7.1 Super( ) method 142
4.7.2 Types of Inheritance 143
4.8 Polymorphism 147
4.8.1 Overloading 148
4.8.2 Operator Overloading 150
4.9 Abstraction 151
4.10 Errors and Exceptions 152
4.10.1 Handling Exceptions 153
4.10.2 Raising Exceptions 157
4.10.3 Instantiating Exceptions 158
4.11 Outcomes 159
4.12 Review Questions 159
4.13 Multiple Choice Questions 159

Chapter-5: Regular Expressions

5.0 Objectives 163
5.1 Introduction 163
5.2 Regular Expressions 163
5.3 Power of Pattern Matching in Regex 164
5.4 Metacharacters in Regular Expression 165
5.4.1 Sequences 166
5.4.2 Characters Class 171
5.4.3 Groups 171
5.5 Pattern Matching 173
5.6 Power of Pattern Searching using Regexp 175
5.7 Real Time Parsing of N/W or System Data using Regex Password Validation 178
5.8 E-Mail validation using Regular Expression 179
5.9 Example Programs 179
5.10 Outcomes 182
5.11 Review Questions 182
5.12 Multiple Choice Questions 183

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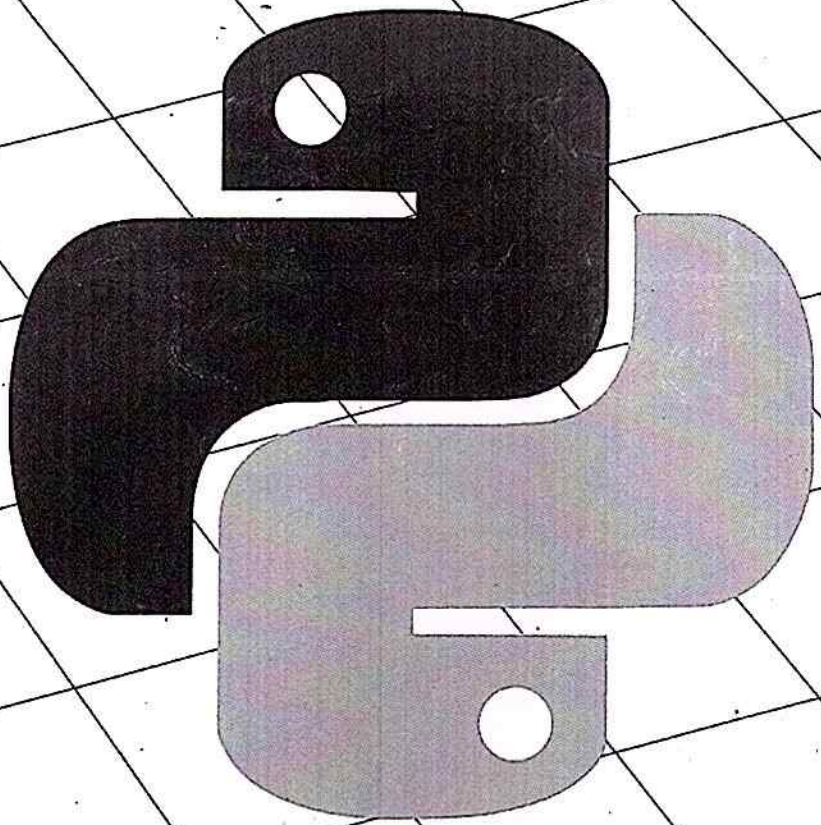

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Authors

Dr. B. Jhansi Vazram
Professor
Department of Computer Science & Engineering
Narasaraopeta Engineering College(Autonomous)
Narasaraopet, Guntur, A.P. - 522 601

Dr. K. Lakshminadh
Professor
Department of Computer Science & Engineering
Narasaraopeta Engineering College(Autonomous)
Narasaraopet, Guntur, A.P. - 522 601

Mr. Shaik. Rafi
Assistant Professor
Department of Computer Science & Engineering
Narasaraopeta Engineering College(Autonomous)
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Problem Solving using Python

Chapter-1: Introduction

1.0	Objectives	1
1.1	Introduction to Python	1
1.2	History of Python Programming Language	2
1.3	Features of Python	3
1.4	Python Advantages and Disadvantages	4
1.5	Real-world Applications of Python	5
1.6	Installing Python	8
1.7	Environment Variables	9
1.8	Setting up Path	9
1.9	Python Interactive Shell	10
1.9.1	Interactive Mode	10
1.9.2	Script Mode	12
1.10	Editing Python Files	12
1.11	Python Virtual Machine	16
1.11.1	Viewing the Byte Code	16
1.12	Python Basics	17
1.12.1	Comments	17
1.12.2	Keywords in Python	18
1.12.3	Variables	19
1.13	Standard Data Types in Python	21
1.13.1	Numbers	22
1.13.2	None	24
1.13.3	Strings	24
1.13.4	Identify Data type of a Variable	25
1.13.5	Check Datatype of a Variable	25
1.13.6	Tuple	26
1.13.7	List	26
1.13.8	Sets	26
1.13.9	Dictionary	27
1.13.10	Type Conversion	27
1.13.11	Mutable and Immutable Data Types in Python	29

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1.14 Operators 29
1.14.1 Arithmetic operators 29
1.14.2 Assignment Operators 32
1.14.3 Comparison Operators (Relational Operators) 32
1.14.4 Logical Operators 35
1.14.5 Bitwise Operators 35
1.14.6 Identity Operators 36
1.14.7 Membership Operators 37
1.15 Expressions 37
1.16 Operator Precedence and Associativity 39
1.17 Indentation 40
1.18 String Operations and Functions 40
1.18.1 Working with Strings 40
1.18.2 String Functions 42
1.19 Math Functions 45
1.20 Input/Ouput Statements 47
1.21 Control Structures 47
1.21.1 Sequential Control Structures 48
1.21.2 Selection/Conditional Statements 48
1.21.3 Iterative Control Structures 51
1.22 Outcomes 53
1.23 Review Questions 53
1.24 Multiple Choice Questions 54

Unit-2: Functions & Event Driven Programming

2.0 Objectives 57
2.1 Introduction to Functions 57
2.2 Function Basics 58
2.2.1 General Form of a Function Definition 59
2.3 Calling Functions 60
2.4 Return Statement 61
2.5 Recursive Functions 62
2.6 Function Arguments 65
2.7 Anonymous Functions or Lambda Functions 67
2.8 Introduction to Event Driven Programming 69
2.8.1 Turtle Graphics 69

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(AUTONOMOUS)
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2.8.2 Turtle Barchart 72
2.9 Event driven programming 73
2.9.1 Event 74
2.9.2 Widgets 74
2.10 Event Handlers 76
2.10.1 Keypress Events 76
2.10.2 Mouse Events 78
2.10.3 Timer Events 79
2.11 Example Programs 81
2.12 Outcomes 84
2.13 Review Questions 84
2.14 Multiple Choice Questions 85

Chapter-3: Data Structures

3.0 Objectives 87
3.1 Introduction 87
3.2 List 88
3.2.1 Creation of List 88
3.2.2 Accessing Elements of a List 88
3.2.3 Updating Values in the Lists 89
3.2.4 Del Statement 89
3.2.5 Nested Lists 90
3.2.6 Operations on List 90
3.2.6.1 Slice Operation on a List 90
3.2.6.2 Concatenation 91
3.2.6.3 Repetition of a List 92
3.2.6.4 Membership of List 93
3.2.7 Methods in List 94
3.3 Tuples 99
3.3.1 Creating a Tuple 100
3.3.2 Accessing values in a Tuple 100
3.3.3 Updating Values in Tuples 101
3.3.4 Deleting Elements in Tuple 101
3.3.5 Converting a List into Tuple 102
3.3.6 Basic tuple operations 102
3.3.6.1 Slicing 102

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(AUTONOMOUS)
NARASARAOPET - 522 601.
Guntur (Dist.), A.P.
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		3.3.6.2 Concatenation	103
		3.3.6.3 Repetition of a Tuple	103
		3.3.6.4 Membership of Tuple	104
		3.3.6.5 Iteration of Tuple	104
		3.3.6.6 Comparison(>,<.==)	105
	3.3.7	Tuple Assignment	105
	3.3.8	Nested Tuples	106
	3.3.9	Tuple Methods	106
	3.3.10	Tuple Built - in - Functions	107
3.4	Dictionaries		109
	3.4.1	Creating Dictionary	110
	3.4.2	Accessing Values in Dictionary	110
	3.4.3	Adding and Modifying an Item in Dictionary	110
	3.4.4	Deleting Items in Dictionary	111
	3.4.5	Nested Dictionaries	111
	3.4.6	Built in Dictionary Functions and Methods	111
3.5	Strings		113
3.6	Sets		116
	3.6.1	Creating and Accessing the Elements of a Set	117
	3.6.2	Set Operations	118
	3.6.3	Set Methods	121
3.7	Files		122
	3.7.1	Different Access Modes in Files	122
	3.7.2	Iterating through Files	123
	3.7.3	Reading and Writing Files	124
	3.7.4	Deleting Files	126
	3.7.5	Python Libraries	126
3.8	Out Comes		127
3.9	Review Questions		127
3.10	Multiple Choice Questions		127

Chapter-4: OOP

4.0	Objectives	131
4.1	Introduction	131
4.2	Features of Object Oriented Programming	131
4.3	Class	132

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4.4 Creating Objects 133
4.5 Methods 135
4.6 Constructors 138
4.7 Inheritance 140
4.7.1 Super( ) method 142
4.7.2 Types of Inheritance 143
4.8 Polymorphism 147
4.8.1 Overloading 148
4.8.2 Operator Overloading 150
4.9 Abstraction 151
4.10 Errors and Exceptions 152
4.10.1 Handling Exceptions 153
4.10.2 Raising Exceptions 157
4.10.3 Instantiating Exceptions 158
4.11 Outcomes 159
4.12 Review Questions 159
4.13 Multiple Choice Questions 159

Chapter-5: Regular Expressions

5.0 Objectives 163
5.1 Introduction 163
5.2 Regular Expressions 163
5.3 Power of Pattern Matching in Regex 164
5.4 Metacharacters in Regular Expression 165
5.4.1 Sequences 166
5.4.2 Characters Class 171
5.4.3 Groups 171
5.5 Pattern Matching 173
5.6 Power of Pattern Searching using Regexp 175
5.7 Real Time Parsing of N/W or System Data using Regex Password Validation 178
5.8 E-Mail validation using Regular Expression 179
5.9 Example Programs 179
5.10 Outcomes 182
5.11 Review Questions 182
5.12 Multiple Choice Questions 183

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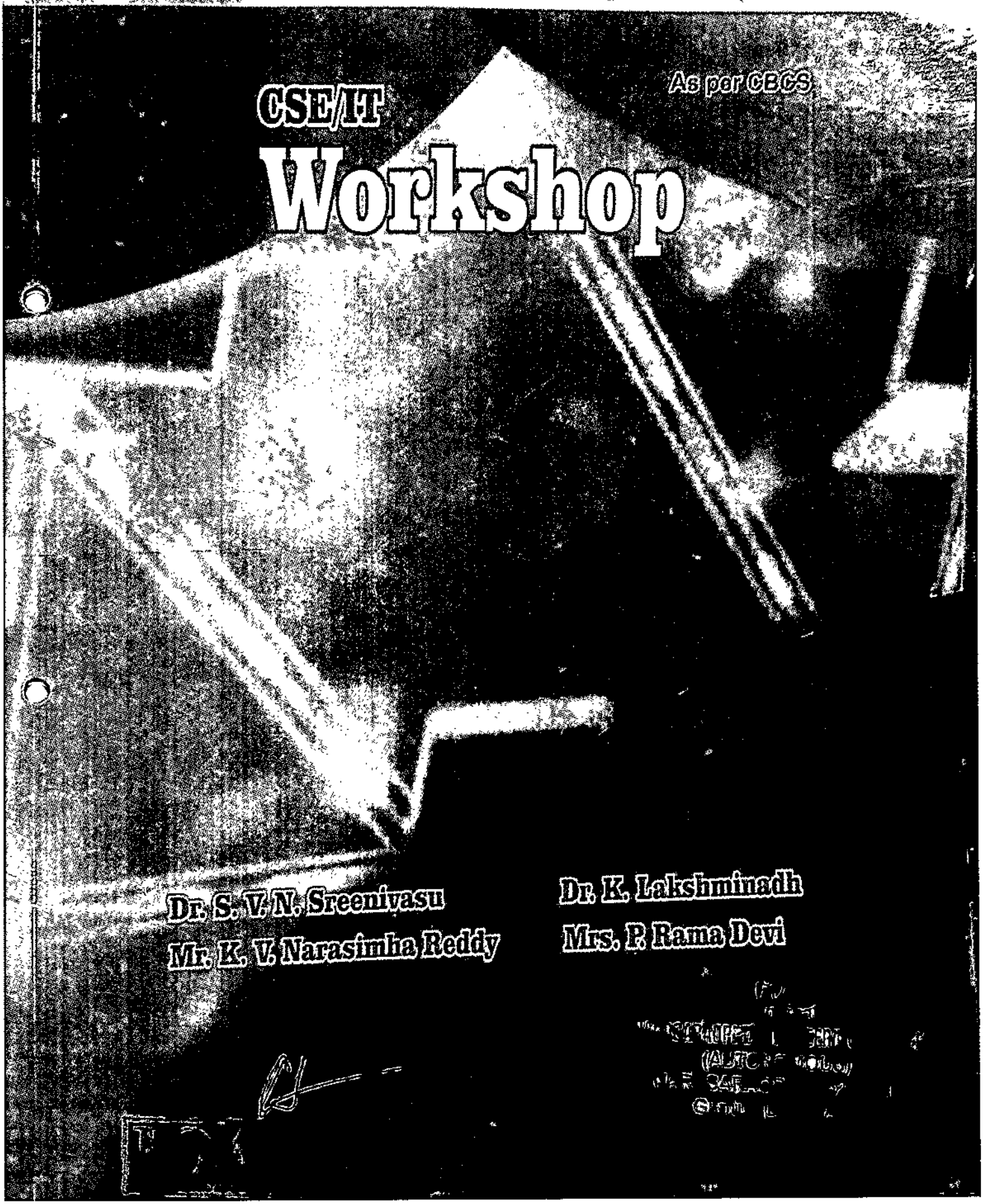

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Dr. K. Lakshminadh
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Dr. S. V. N. Sreenivasu
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	Page No
Task - 1	1-18
Task - 2	19-26
Task - 3	27-36
Task - 4	37-44
Task - 5	45-52
Task - 6	53-64
Task - 7	65-70
Task - 8	71-76
Task - 9	77-94
Task - 10	95-118
Task - 11	119-132
Task - 12	133-150
Task - 13	151-158
Task - 14	159-162

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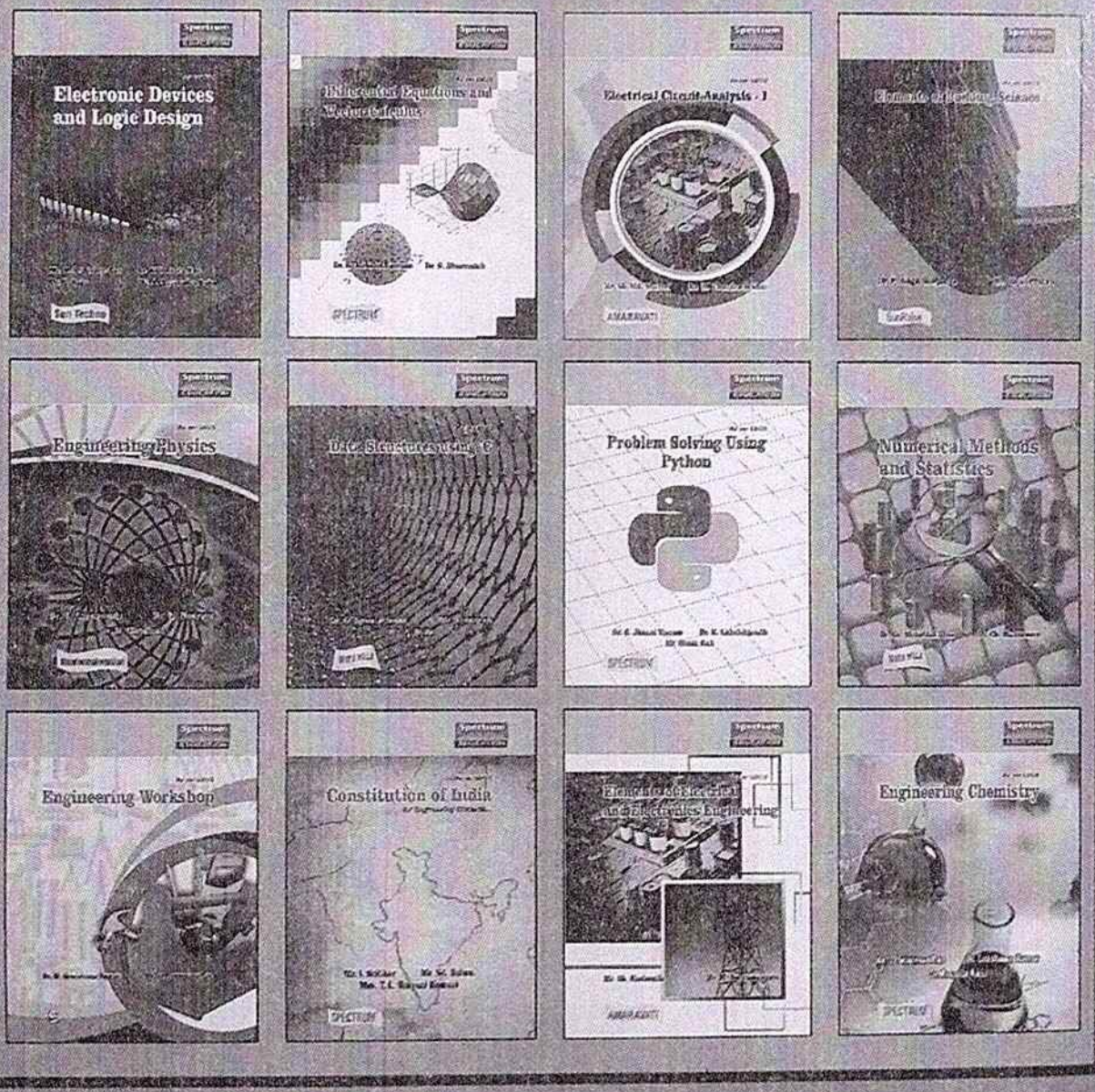

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Department of Computer Science and Engineering
Narasaraopeta Engineering College(Autonomous)
Narasaraopet, Guntur, A.P. - 522 601

Dr. K. Lakshminadh
Professor
Department of Computer Science and Engineering
Narasaraopeta Engineering College(Autonomous)
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Assistant Professor
Department of Computer Science and Engineering
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	Page No
Task - 1	1-18
Task - 2	19-26
Task - 3	27-36
Task - 4	37-44
Task - 5	45-52
Task - 6	53-64
Task - 7	65-70
Task - 8	71-76
Task - 9	77-94
Task - 10	95-118
Task - 11	119-132
Task - 12	133-150
Task - 13	151-158
Task - 14	159-162

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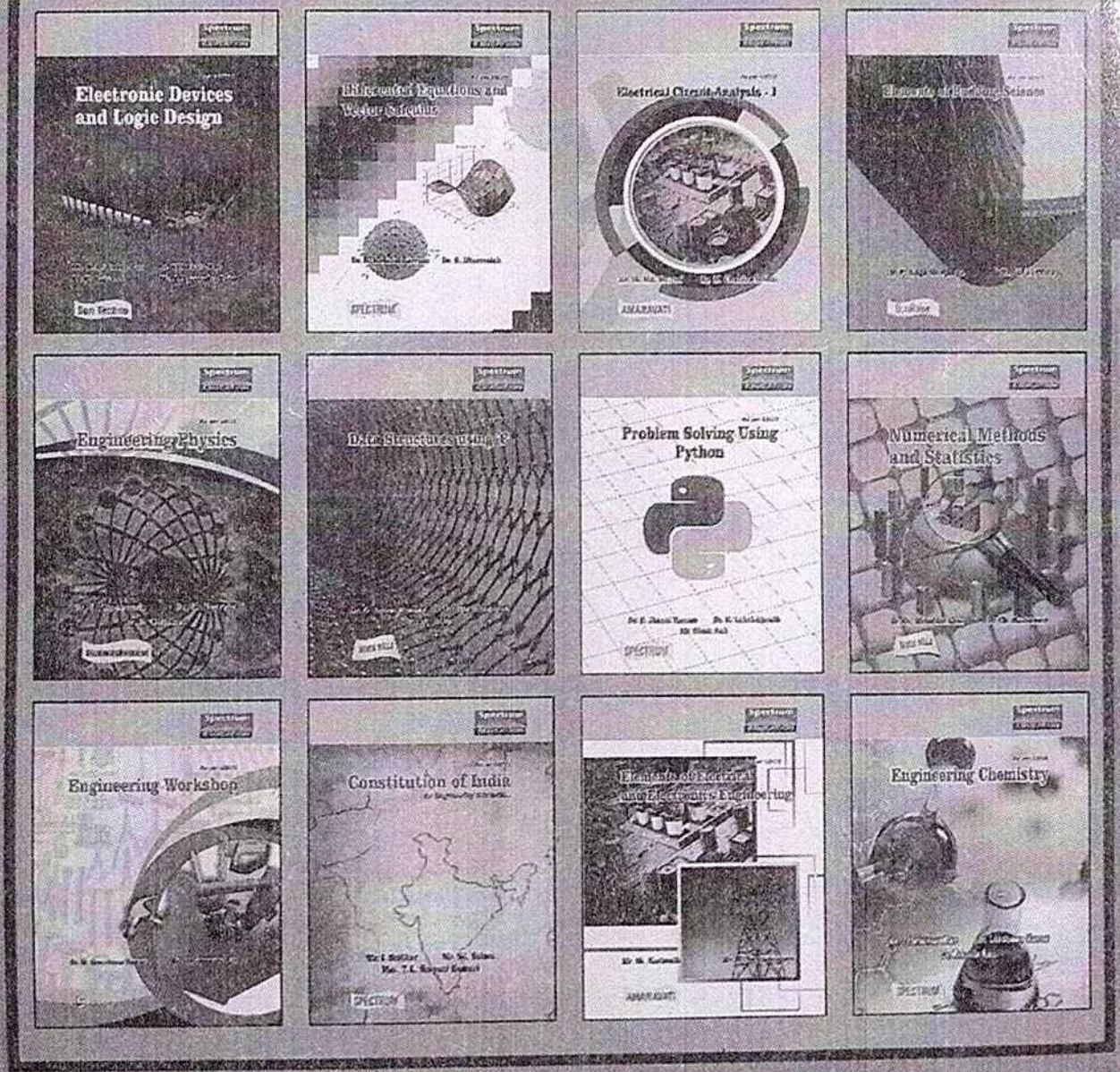

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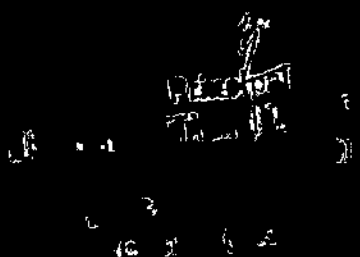

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Dr. S. V. N. Sreenivasu
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Department of Computer Science and Engineering
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Dr. K. Lakshminadh
Professor
Department of Computer Science and Engineering
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	Page No
Task - 1	1-18
Task - 2	19-26
Task - 3	27-36
Task - 4	37-44
Task - 5	45-52
Task - 6	53-64
Task - 7	65-70
Task - 8	71-76
Task - 9	77-94
Task - 10	95-118
Task - 11	119-132
Task - 12	133-150
Task - 13	151-158
Task - 14	159-162

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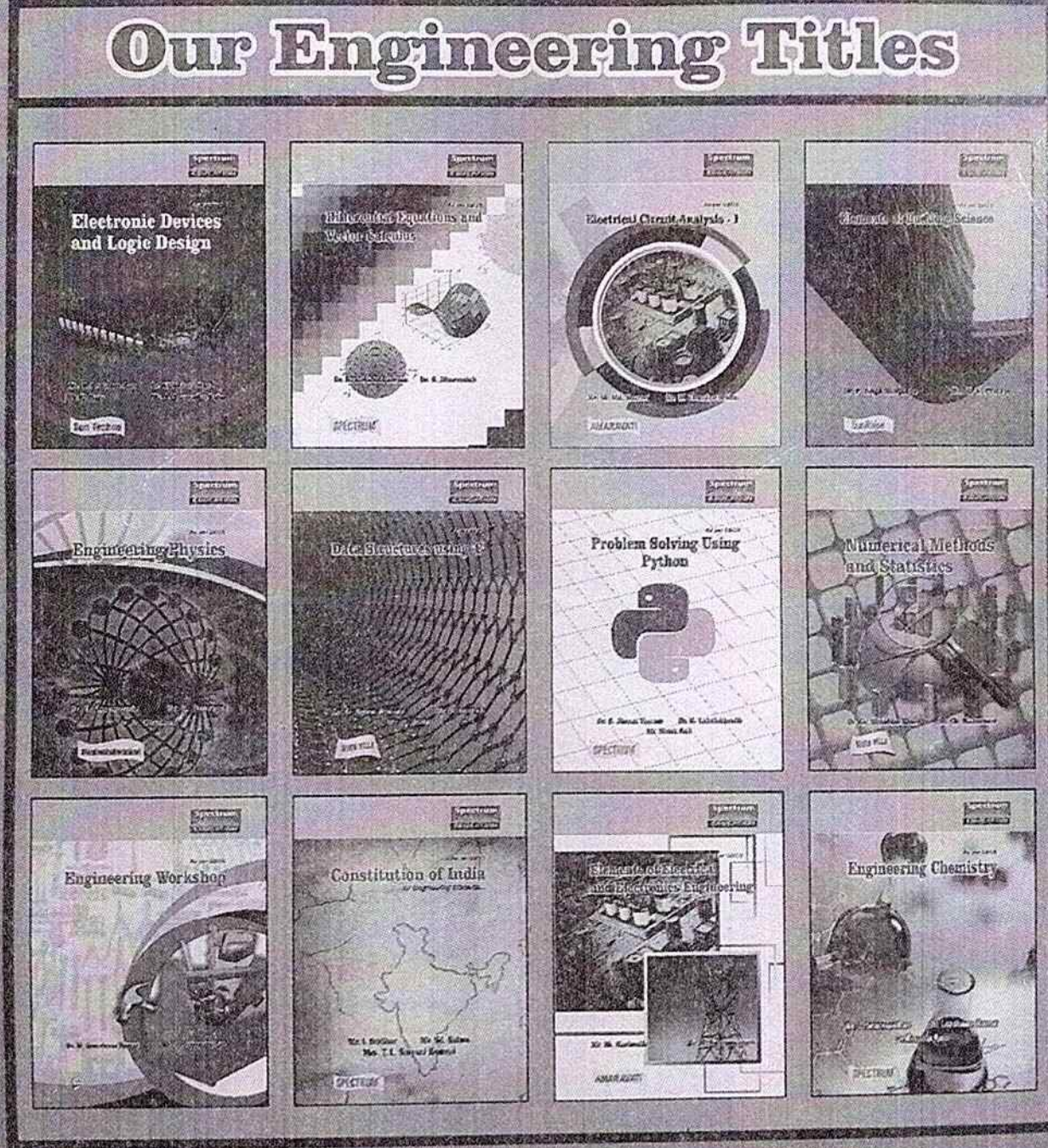

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	Page No
Task - 1	1-18
Task - 2	19-26
Task - 3	27-36
Task - 4	37-44
Task - 5	45-52
Task - 6	53-64
Task - 7	65-70
Task - 8	71-76
Task - 9	77-94
Task - 10	95-118
Task - 11	119-132
Task - 12	133-150
Task - 13	151-158
Task - 14	159-162

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Authors

Dr. G. Syam Prasad
Professor & HOD
Department of Information Techology
Narasaraopeta Engineering College(Autonomous)
Narasaraopet, Guntur, A.P. - 522 601

Mr. Y. Suresh
Assistant Professor
Department of Computer Science and Engineering
Narasaraopeta Engineering College(Autonomous)
Narasaraopet, Guntur, A.P. - 522 601

Mr. R. Dilip
Assistant Professor
Department of Computer Science and Engineering
Narasaraopeta Engineering College(Autonomous)
Narasaraopet, Guntur, A.P. - 522 601

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		S.No
	Chapter-1: Introduction to Data Structures	
1.0	Objectives	1
1.1	Introduction to Data Structures	1
1.2	Basic Terminology of data structures	2
1.3	Classification of Data Structures	2
	1.3.1 Linear Data Structures	2
	1.3.2 Non-Linear Data Structures	5
1.4	Operations Performed by Data Structures	7
1.5	Abstract Data types	7
1.6	Algorithms	9
1.7	Algorithm Design Techniques	9
	1.7.1 Brute Force Algorithm	9
	1.7.2 Divide and Conquer	10
	1.7.3 Dynamic Programming	10
	1.7.4 Greedy Algorithm	11
1.8	Recursive Algorithms	11
	1.8.1 Various Types of Recursive Algorithm	12
	1.8.2 Factorial Function	12
	1.8.3 Fibonacci Sequence	14
	1.8.4 Checking Palindrome Property	15
	1.8.5 An Algorithm for base Conversion Recursively	17
	1.8.6 Implementation of Euclid GCD Algorithm	17
	1.8.7 Towers of Hanoi	19
1.9	Points to Remember	23
1.10	Review Questions	25
1.11	Multiple Choice Questions	26
	Chapter-2: Searching and Sorting	
2.0	Aims and Objectives	29
2.1	Introduction	29
2.2	Searching	30
	2.2.1 Linear Search	30
	2.2.2 Binary Search	34
	2.2.2.1 Algorithm for Binary Search	35
	2.2.3 Advantages and Disadvntages of Binary Search	40
	2.2.4 Advantages and Disadvntages of Linear Search	41
2.3	Sorting	41

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(AUTONOMOUS)
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2.3.1 Bubble Sort 42
2.3.1.1 Advantages and Disadvntages of Bubble Sort 45
2.3.2 Selection Sort 45
2.3.2.1 Advantages and Disadvantages of Selection Sort 49
2.3.3 Insertion Sort 49
2.3.3.1 Advantages and Disadvntages of Insertion Sort 53
2.3.4 Quick Sort 54
2.3.5 Merge Sort 58
2.3.6 Comparison of Various Sorting Algorithms 63
2.4 Summary 67
2.5 Exercises 67
2.6 Multiple Choice Questions 68

Chapter-3: Stacks

3.0 Objectives 71
3.1 Introduction 71
3.1.1 Stack and Array 72
3.2 Representation of stack 74
3.2.1 Primitive Operations on Stacks 75
3.3 Implementation of Stack using Array 76
3.3.1 Implementation of Push Operation 76
3.3.2 Implementation of Pop Operation 77
3.4 Applications of Stack 83
3.5 Evaluating Arithmetic Expression Using Stacks 83
3.6 Arithmetic Expression Conversion 85
3.6.1 Conversion of Infix to Postfix Notation 88
3.6.2 Conversion of Infix to Prefix Notation 95
3.7 Evaluating Postfix Notation 96
3.8 Points to Remember 103
3.9 Review Questions 104
3.10 Multiple Choice Questions 105

Chater-4: Queues

4.0 Objectives 107
4.1 Introduction 107
4.2 Implementation of Queues using Arrays 108
4.3 Circular Queues 115
4.3.1 Implementation of a Circular Queue 115
4.3.2 Working of a Circular Queue 117
4.4 Priority Queue 122
4.5 Applications of Queues 125
4.6 Points to Remember 126

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4.7 Review Questions 127
4.8 Multiple Choice Questions 128

Chapter-5: Linked List

5.0 Objectives 131
5.1 Introduction 131
5.2 Representation of Linked List 133
5.2.1 Linked List Using Pointers 133
5.2.2 Singly Linked List 133
5.3 Representation of a linked list in Memory 135
5.3.1 Memory Allocation 137
5.3.2 Implementation of Single Linked List in C 137
5.4 Operations on Single Linked List 138
5.5 Traversing 139
5.6 Insertion in a Linked List 139
5.7 Deletion from Linked List 144
5.8 Searching List 147
5.8.1 Searching in an Unsorted List 147
5.8.2 Searching in a Sorted List 148
5.9 Reversing 148
5.10 Applications of Linked Lists 155
5.10.1 Implementation of Polynomials using Linked Lists 155
5.10.2 Sparse Matrix as Linked Lists 160
5.11 Doubly Linked List 166
5.11.1 Insertion in a Doubly Linked List 167
5.11.2 Deletion from Doubly Linked List 170
5.12 Circular Linked List 176
5.12.1 Traversing 177
5.12.2 Insertion 178
5.12.3 Deletion 180
5.13 Advantages and Disadvantages of Various Linked Lists 186
5.14 Linked List Representation of Stacks 188
5.15 Linked List Representation of Queues 192
5.16 Points to Remember 197
5.17 Review Questions 199
5.18 Multiple Choice Questions 199

Chapter-6: Non Linear Data Structures

6.0 Objectives 203
6.1 Introduction 203
6.2 Binary Tree 205
6.2.1 Basic Tree Terminologies 206

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(AUTONOMOUS)
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Guntur (Dist.), A.P.

6.2.2 Full Binary Tree 206
6.2.3 Complete Binary Tree 207
6.2.4 Extended Binary Tree 208
6.3 Binary Tree Representations 209
6.3.1 Array Representation of Binary Trees 209
6.3.2 Linked Representation of Binary Trees 211
6.4 Binary Tree Traversals 216
6.4.1 Pre-Order Traversal 216
6.4.2 In-Order Traversal 217
6.4.3 Post-Order Traversal 219
6.5 Binary Tree Reprentation of Trees 220
6.6 Binary Search Tree 222
6.6.1 Construction of a Binary Search Tree 223
6.6.2 Searching a Node 224
6.6.3 Inserting a Node 225
6.6.4 Deleting a Node 227
6.6.5 Traversing a Binary Search Tree 230
6.7 Construction of Binary Tree from its Traversals 242
6.7.1 Inorder and Preorder 243
6.7.2 Inorder and Postorder 244
6.7.3 Expression Trees 245
6.8 AVL Trees (Height-Balanced Tree) 247
6.8.1 Seraching a Key in an AVL Tree 249
6.8.2 Inserting a Node into an AVL Tree 249
6.9 Applications of Trees 252
6.9.1 Set Representation 252
6.10 M-way Search Trees: B Tree 254
6.10.1 Definition of B-trees 254
6.10.2 Insertion in B Tree 256
6.10.3 Deletion in B Tree 259
6.10.4 B+ Trees 260
6.11 Points to Remember 261
6.12 Review Questions 262
6.13 Multiple Choice Questions 264

Chapter-7: Graphs and Hashing

7.0 Objectives 269
7.1 Introduction 269
7.2 Graphs: Definition and Terminology 270
7.2.1 Basic Terminologies 271
7.3 RepresentationS of Graph 272
7.3.1 Adjacency Matrix Representation 272
7.3.2 Adjacency Lists Representation 275

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	7.3.3 Incidence Matrix	277
	7.3.4 Adjacency MultiLists	278
	7.3.5 Path Matrix	279
7.4	Traversing a Graph	280
	7.4.1 Depth First Search	281
	7.4.2 Breadth First Search	286
7.5	Operations on Graphs	294
	7.5.1 Searching in a Graph	294
	7.5.2 Insertion in a Graph	294
	7.5.3 Deletion from a Graph	295
7.6	Applications of Graphs	297
	7.6.1 Spanning Tree	297
	7.6.2 Minimum Spanning Trees	299
	7.6.3 Kruskals Algorithm	301
	7.6.4 Prim's Algorithm	303
	7.6.5 Topological Sorting	305
	7.6.6 Shortest Path Problems - Dijkstra's Algorithm	309
	7.6.7 Connected Components	310
7.7	Hashing and Collision	312
	7.7.1 Introduction	312
	7.7.2 Hash Tables	313
7.8	Hash Functions	314
	7.8.1 Division Remainder Method	314
	7.8.2 Multiplicative Method	315
	7.8.3 Folded Key Method	315
	7.8.4 Midsquare Method	316
7.9	Collision Resolution Techniques	317
	7.9.1 Separate Chaining	317
	7.9.2 Open Addressing	319
	7.9.2.1 Linear Probing	319
	7.9.2.2 Quadratic Probing	323
	7.9.2.3 Double Hashing	325
7.10	Points to Remember	327
7.11	Review Questions	330
7.12	Multiple Choice Questions	332
	Annexure	
A.1	Heap Sort	337
A.2	Linked list Versus Arrays	345
A.3	Memory Allocation and De-allocation of a Linked List	346
A.4	Searching in Double Linked List	347
A.5	Searching in a Circular Linked List	351

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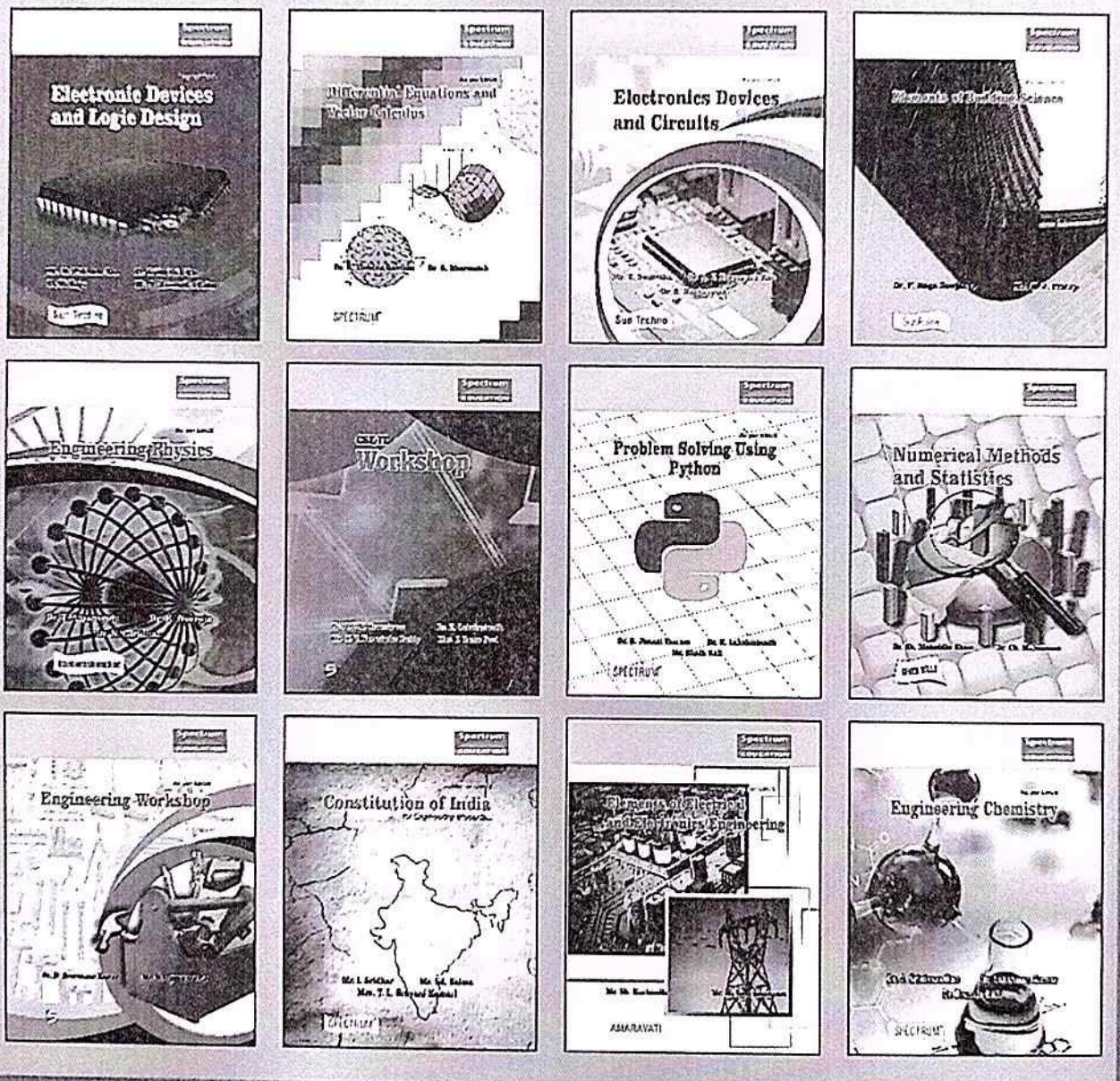

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Authors

Dr. G. Syam Prasad
Professor & HOD
Department of Information Techology
Narasaraopeta Engineering College(Autonomous)
Narasaraopet, Guntur, A.P. - 522 601

Mr. Y. Suresh
Assistant Professor
Department of Computer Science and Engineering
Narasaraopeta Engineering College(Autonomous)
Narasaraopet, Guntur, A.P. - 522 601

Mr. R. Dilip
Assistant Professor
Department of Computer Science and Engineering
Narasaraopeta Engineering College(Autonomous)
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S.No

Chapter-1: Introduction to Data Structures

1.0 Objectives 1
1.1 Introduction to Data Structures 1
1.2 Basic Terminology of data structures 2
1.3 Classification of Data Structures 2
1.3.1 Linear Data Structures 2
1.3.2 Non-Linear Data Structures 5
1.4 Operations Performed by Data Structures 7
1.5 Abstract Data types 7
1.6 Algorithms 9
1.7 Algorithm Design Techniques 9
1.7.1 Brute Force Algorithm 9
1.7.2 Divide and Conquer 10
1.7.3 Dynamic Programming 10
1.7.4 Greedy Algorithm 11
1.8 Recursive Algorithms 11
1.8.1 Various Types of Recursive Algorithm 12
1.8.2 Factorial Function 12
1.8.3 Fibonacci Sequence 14
1.8.4 Checking Palindrome Property 15
1.8.5 An Algorithm for base Conversion Recursively 17
1.8.6 Implementation of Euclid GCD Algorithm 17
1.8.7 Towers of Hanoi 19
1.9 Points to Remember 23
1.10 Review Questions 25
1.11 Multiple Choice Questions 26

Chapter-2: Searching and Sorting

2.0 Aims and Objectives 29
2.1 Introduction 29
2.2 Searching 30
2.2.1 Linear Search 30
2.2.2 Binary Search 34
2.2.2.1 Algorithm for Binary Search 35
2.2.3 Advantages and Disadvntages of Binary Search 40
2.2.4 Advantages and Disadvntages of Linear Search 41
2.3 Sorting 41

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2.3.1 Bubble Sort 42
2.3.1.1 Advantages and Disadvntages of Bubble Sort 45
2.3.2 Selection Sort 45
2.3.2.1 Advantages and Disadvantages of Selection Sort 49
2.3.3 Insertion Sort 49
2.3.3.1 Advantages and Disadvntages of Insertion Sort 53
2.3.4 Quick Sort 54
2.3.5 Merge Sort 58
2.3.6 Comparison of Various Sorting Algorithms 63
2.4 Summary 67
2.5 Exercises 67
2.6 Multiple Choice Questions 68

Chapter-3: Stacks

3.0 Objectives 71
3.1 Introduction 71
3.1.1 Stack and Array 72
3.2 Representation of stack 74
3.2.1 Primitive Operations on Stacks 75
3.3 Implementation of Stack using Array 76
3.3.1 Implementation of Push Operation 76
3.3.2 Implementation of Pop Operation 77
3.4 Applications of Stack 83
3.5 Evaluating Arithmetic Expression Using Stacks 83
3.6 Arithmetic Expression Conversion 85
3.6.1 Conversion of Infix to Postfix Notation 88
3.6.2 Conversion of Infix to Prefix Notation 95
3.7 Evaluating Postfix Notation 96
3.8 Points to Remember 103
3.9 Review Questions 104
3.10 Multiple Choice Questions 105

Chater-4: Queues

4.0 Objectives 107
4.1 Introduction 107
4.2 Implementation of Queues using Arrays 108
4.3 Circular Queues 115
4.3.1 Implementation of a Circular Queue 115
4.3.2 Working of a Circular Queue 117
4.4 Priority Queue 122
4.5 Applications of Queues 125
4.6 Points to Remember 126

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4.7 Review Questions 127
4.8 Multiple Choice Questions 128

Chapter-5: Linked List

5.0 Objectives 131
5.1 Introduction 131
5.2 Representation of Linked List 133
5.2.1 Linked List Using Pointers 133
5.2.2 Singly Linked List 133
5.3 Representation of a linked list in Memory 135
5.3.1 Memory Allocation 137
5.3.2 Implementation of Single Linked List in C 137
5.4 Operations on Single Linked List 138
5.5 Traversing 139
5.6 Insertion in a Linked List 139
5.7 Deletion from Linked List 144
5.8 Searching List 147
5.8.1 Searching in an Unsorted List 147
5.8.2 Searching in a Sorted List 148
5.9 Reversing 148
5.10 Applications of Linked Lists 155
5.10.1 Implementation of Polynomials using Linked Lists 155
5.10.2 Sparse Matrix as Linked Lists 160
5.11 Doubly Linked List 166
5.11.1 Insertion in a Doubly Linked List 167
5.11.2 Deletion from Doubly Linked List 170
5.12 Circular Linked List 176
5.12.1 Traversing 177
5.12.2 Insertion 178
5.12.3 Deletion 180
5.13 Advantages and Disadvantages of Various Linked Lists 186
5.14 Linked List Representation of Stacks 188
5.15 Linked List Representation of Queues 192
5.16 Points to Remember 197
5.17 Review Questions 199
5.18 Multiple Choice Questions 199

Chapter-6: Non Linear Data Structures

6.0 Objectives 203
6.1 Introduction 203
6.2 Binary Tree 205
6.2.1 Basic Tree Terminologies 206

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6.2.2 Full Binary Tree 206
6.2.3 Complete Binary Tree 207
6.2.4 Extended Binary Tree 208
6.3 Binary Tree Representations 209
6.3.1 Array Representation of Binary Trees 209
6.3.2 Linked Representation of Binary Trees 211
6.4 Binary Tree Traversals 216
6.4.1 Pre-Order Traversal 216
6.4.2 In-Order Traversal 217
6.4.3 Post-Order Traversal 219
6.5 Binary Tree Reprentation of Trees 220
6.6 Binary Search Tree 222
6.6.1 Construction of a Binary Search Tree 223
6.6.2 Searching a Node 224
6.6.3 Inserting a Node 225
6.6.4 Deleting a Node 227
6.6.5 Traversing a Binary Search Tree 230
6.7 Construction of Binary Tree from its Traversals 242
6.7.1 Inorder and Preorder 243
6.7.2 Inorder and Postorder 244
6.7.3 Expression Trees 245
6.8 AVL Trees (Height-Balanced Tree) 247
6.8.1 Seraching a Key in an AVL Tree 249
6.8.2 Inserting a Node into an AVL Tree 249
6.9 Applications of Trees 252
6.9.1 Set Representation 252
6.10 M-way Search Trees: B Tree 254
6.10.1 Definition of B-trees 254
6.10.2 Insertion in B Tree 256
6.10.3 Deletion in B Tree 259
6.10.4 B+ Trees 260
6.11 Points to Remember 261
6.12 Review Questions 262
6.13 Multiple Choice Questions 264

Chapter-7: Graphs and Hashing

7.0 Objectives 269
7.1 Introduction 269
7.2 Graphs: Definition and Terminology 270
7.2.1 Basic Terminologies 271
7.3 Representations of Graph 272
7.3.1 Adjacency Matrix Representation 272
7.3.2 Adjacency Lists Representation 275

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Guntur (Dist.)

	7.3.3 Incidence Matrix	277
	7.3.4 Adjacency MultiLists	278
	7.3.5 Path Matrix	279
7.4	Traversing a Graph	280
	7.4.1 Depth First Search	281
	7.4.2 Breadth First Search	286
7.5	Operations on Graphs	294
	7.5.1 Searching in a Graph	294
	7.5.2 Insertion in a Graph	294
	7.5.3 Deletion from a Graph	295
7.6	Applications of Graphs	297
	7.6.1 Spanning Tree	297
	7.6.2 Minimum Spanning Trees	299
	7.6.3 Kruskals Algorithm	301
	7.6.4 Prim's Algorithm	303
	7.6.5 Topological Sorting	305
	7.6.6 Shortest Path Problems - Dijkstra's Algorithm	309
	7.6.7 Connected Components	310
7.7	Hashing and Collision	312
	7.7.1 Introduction	312
	7.7.2 Hash Tables	313
7.8	Hash Functions	314
	7.8.1 Division Remainder Method	314
	7.8.2 Multiplicative Method	315
	7.8.3 Folded Key Method	315
	7.8.4 Midsquare Method	316
7.9	Collision Resolution Techniques	317
	7.9.1 Separate Chaining	317
	7.9.2 Open Addressing	319
	7.9.2.1 Linear Probing	319
	7.9.2.2 Quadratic Probing	323
	7.9.2.3 Double Hashing	325
7.10	Points to Remember	327
7.11	Review Questions	330
7.12	Multiple Choice Questions	332
	Annexure	
A.1	Heap Sort	337
A.2	Linked list Versus Arrays	345
A.3	Memory Allocation and De-allocation of a Linked List	346
A.4	Searching in Double Linked List	347
A.5	Searching in a Circular Linked List	351

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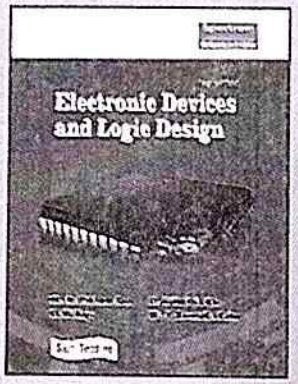

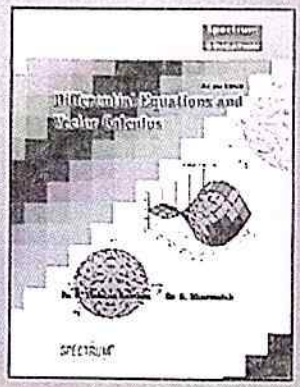

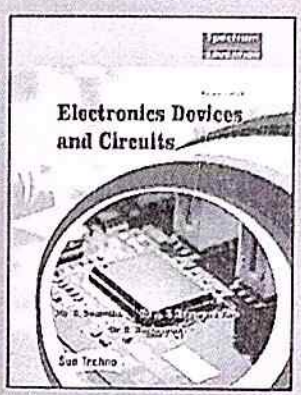

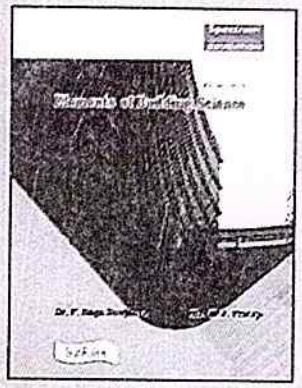

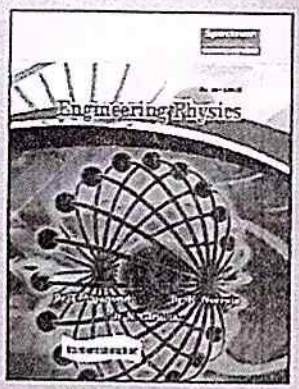

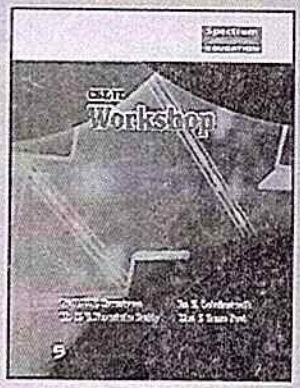

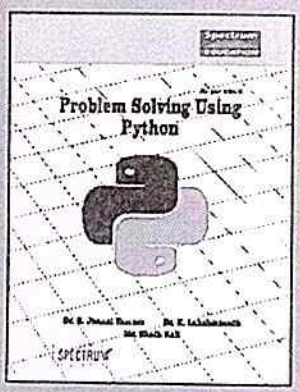

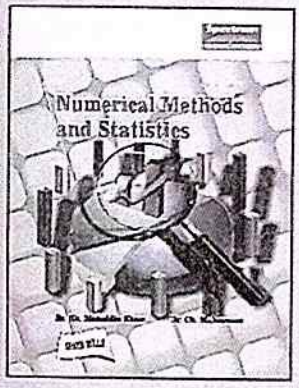

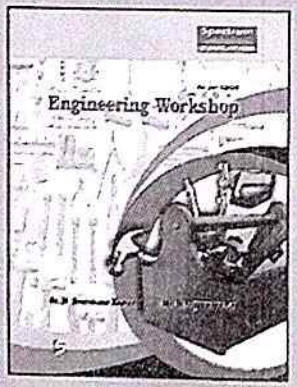

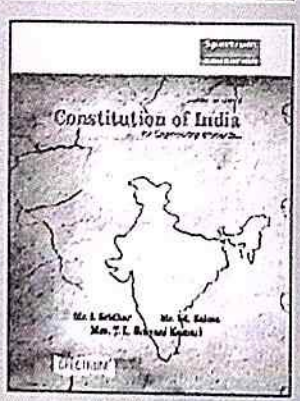

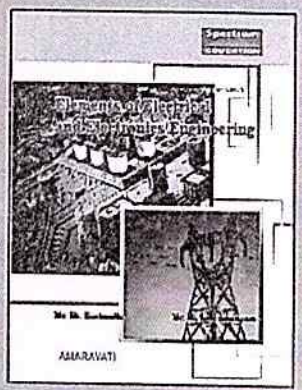

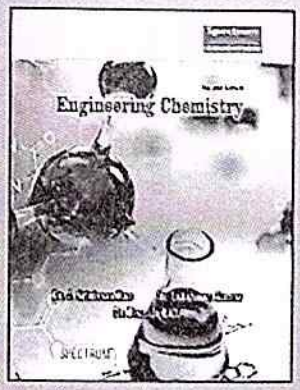

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Authors

Dr. G. Syam Prasad
Professor & HOD
Department of Information Techology
Narasaraopeta Engineering College(Autonomous)
Narasaraopet, Guntur, A.P. - 522 601

Mr. Y. Suresh
Assistant Professor
Department of Computer Science and Engineering
Narasaraopeta Engineering College(Autonomous)
Narasaraopet, Guntur, A.P. - 522 601

Mr. R. Dilip
Assistant Professor
Department of Computer Science and Engineering
Narasaraopeta Engineering College(Autonomous)
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		S.No
	Chapter-1: Introduction to Data Structures	1
1.0	Objectives	1
1.1	Introduction to Data Structures	2
1.2	Basic Terminology of data structures	2
1.3	Classification of Data Structures	2
	1.3.1 Linear Data Structures	5
	1.3.2 Non-Linear Data Structures	7
1.4	Operations Performed by Data Structures	7
1.5	Abstract Data types	9
1.6	Algorithms	9
1.7	Algorithm Design Techniques	9
	1.7.1 Brute Force Algorithm	10
	1.7.2 Divide and Conquer	10
	1.7.3 Dynamic Programming	11
	1.7.4 Greedy Algorithm	11
1.8	Recursive Algorithms	12
	1.8.1 Various Types of Recursive Algorithm	12
	1.8.2 Factorial Function	14
	1.8.3 Fibonacci Sequence	15
	1.8.4 Checking Palindrome Property	17
	1.8.5 An Algorithm for base Conversion Recursively	17
	1.8.6 Implementation of Euclid GCD Algorithm	19
	1.8.7 Towers of Hanoi	23
1.9	Points to Remember	25
1.10	Review Questions	26
1.11	Multiple Choice Questions	
	Chapter-2: Searching and Sorting	29
2.0	Aims and Objectives	29
2.1	Introduction	30
2.2	Searching	30
	2.2.1 Linear Search	34
	2.2.2 Binary Search	35
	2.2.2.1 Algorithm for Binary Search	40
	2.2.3 Advantages and Disadvntages of Binary Search	41
	2.2.4 Advantages and Disadvntages of Linear Search	41
2.3	Sorting	

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2.3.1 Bubble Sort 42
2.3.1.1 Advantages and Disadvntages of Bubble Sort 45
2.3.2 Selection Sort 45
2.3.2.1 Advantages and Disadvantages of Selection Sort 49
2.3.3 Insertion Sort 49
2.3.3.1 Advantages and Disadvntages of Insertion Sort 53
2.3.4 Quick Sort 54
2.3.5 Merge Sort 58
2.3.6 Comparison of Various Sorting Algorithms 63
2.4 Summary 67
2.5 Exercises 67
2.6 Multiple Choice Questions 68

Chapter-3: Stacks

3.0 Objectives 71
3.1 Introduction 71
3.1.1 Stack and Array 72
3.2 Representation of stack 74
3.2.1 Primitive Operations on Stacks 75
3.3 Implementation of Stack using Array 76
3.3.1 Implementation of Push Operation 76
3.3.2 Implementation of Pop Operation 77
3.4 Applications of Stack 83
3.5 Evaluating Arithmetic Expression Using Stacks 83
3.6 Arithmetic Expression Conversion 85
3.6.1 Conversion of Infix to Postfix Notation 88
3.6.2 Conversion of Infix to Prefix Notation 95
3.7 Evaluating Postfix Notation 96
3.8 Points to Remember 103
3.9 Review Questions 104
3.10 Multiple Choice Questions 105

Chater-4: Queues

4.0 Objectives 107
4.1 Introduction 107
4.2 Implementation of Queues using Arrays 108
4.3 Circular Queues 115
4.3.1 Implementation of a Circular Queue 115
4.3.2 Working of a Circular Queue 117
4.4 Priority Queue 122
4.5 Applications of Queues 125
4.6 Points to Remember 126

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4.7 Review Questions 127
4.8 Multiple Choice Questions 128

Chapter-5: Linked List

5.0 Objectives 131
5.1 Introduction 131
5.2 Representation of Linked List 133
5.2.1 Linked List Using Pointers 133
5.2.2 Singly Linked List 133
5.3 Representation of a linked list in Memory 135
5.3.1 Memory Allocation 137
5.3.2 Implementation of Single Linked List in C 137
5.4 Operations on Single Linked List 138
5.5 Traversing 139
5.6 Insertion in a Linked List 139
5.7 Deletion from Linked List 144
5.8 Searching List 147
5.8.1 Searching in an Unsorted List 147
5.8.2 Searching in a Sorted List 148
5.9 Reversing 148
5.10 Applications of Linked Lists 155
5.10.1 Implementation of Polynomials using Linked Lists 155
5.10.2 Sparse Matrix as Linked Lists 160
5.11 Doubly Linked List 166
5.11.1 Insertion in a Doubly Linked List 167
5.11.2 Deletion from Doubly Linked List 170
5.12 Circular Linked List 176
5.12.1 Traversing 177
5.12.2 Insertion 178
5.12.3 Deletion 180
5.13 Advantages and Disadvantages of Various Linked Lists 186
5.14 Linked List Representation of Stacks 188
5.15 Linked List Representation of Queues 192
5.16 Points to Remember 197
5.17 Review Questions 199
5.18 Multiple Choice Questions 199

Chapter-6: Non Linear Data Structures

6.0 Objectives 203
6.1 Introduction 203
6.2 Binary Tree 205
6.2.1 Basic Tree Terminologies 206

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6.2.2 Full Binary Tree 206
6.2.3 Complete Binary Tree 207
6.2.4 Extended Binary Tree 208
6.3 Binary Tree Representations 209
6.3.1 Array Representation of Binary Trees 209
6.3.2 Linked Representation of Binary Trees 211
6.4 Binary Tree Traversals 216
6.4.1 Pre-Order Traversal 216
6.4.2 In-Order Traversal 217
6.4.3 Post-Order Traversal 219
6.5 Binary Tree Reprentation of Trees 220
6.6 Binary Search Tree 222
6.6.1 Construction of a Binary Search Tree 223
6.6.2 Searching a Node 224
6.6.3 Inserting a Node 225
6.6.4 Deleting a Node 227
6.6.5 Traversing a Binary Search Tree 230
6.7 Construction of Binary Tree from its Traversals 242
6.7.1 Inorder and Preorder 243
6.7.2 Inorder and Postorder 244
6.7.3 Expression Trees 245
6.8 AVL Trees (Height-Balanced Tree) 247
6.8.1 Seraching a Key in an AVL Tree 249
6.8.2 Inserting a Node into an AVL Tree 249
6.9 Applications of Trees 252
6.9.1 Set Representation 252
6.10 M-way Search Trees: B Tree 254
6.10.1 Definition of B-trees 254
6.10.2 Insertion in B Tree 256
6.10.3 Deletion in B Tree 259
6.10.4 B+ Trees 260
6.11 Points to Remember 261
6.12 Review Questions 262
6.13 Multiple Choice Questions 264

Chapter-7: Graphs and Hashing

7.0 Objectives 269
7.1 Introduction 269
7.2 Graphs: Definition and Terminology 270
7.2.1 Basic Terminologies 271
7.3 RepresentationS of Graph 272
7.3.1 Adjacency Matrix Representation 272
7.3.2 Adjacency Lists Representation 275

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7.3.3 Incidence Matrix 277
7.3.4 Adjacency MultiLists 278
7.3.5 Path Matrix 279
7.4 Traversing a Graph 280
7.4.1 Depth First Search 281
7.4.2 Breadth First Search 286
7.5 Operations on Graphs 294
7.5.1 Searching in a Graph 294
7.5.2 Insertion in a Graph 294
7.5.3 Deletion from a Graph 295
7.6 Applications of Graphs 297
7.6.1 Spanning Tree 297
7.6.2 Minimum Spanning Trees 299
7.6.3 Kruskals Algorithm 301
7.6.4 Prim's Algorithm 303
7.6.5 Topological Sorting 305
7.6.6 Shortest Path Problems - Dijkstra's Algorithm 309
7.6.7 Connected Components 310
7.7 Hashing and Collision 312
7.7.1 Introduction 312
7.7.2 Hash Tables 313
7.8 Hash Functions 314
7.8.1 Division Remainder Method 314
7.8.2 Multiplicative Method 315
7.8.3 Folded Key Method 315
7.8.4 Midsquare Method 316
7.9 Collision Resolution Techniques 317
7.9.1 Separate Chaining 317
7.9.2 Open Addressing 319
7.9.2.1 Linear Probing 319
7.9.2.2 Quadratic Probing 323
7.9.2.3 Double Hashing 325
7.10 Points to Remember 327
7.11 Review Questions 330
7.12 Multiple Choice Questions 332

Annexure

A.1 Heap Sort 337
A.2 Linked list Versus Arrays 345
A.3 Memory Allocation and De-allocation of a Linked List 346
A.4 Searching in Double Linked List 347
A.5 Searching in a Circular Linked List 351

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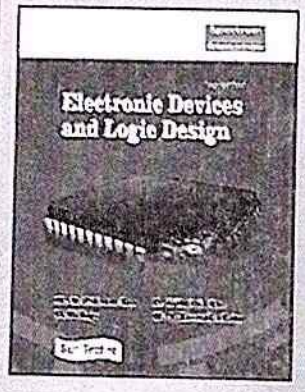

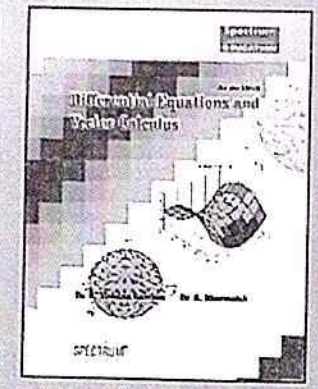



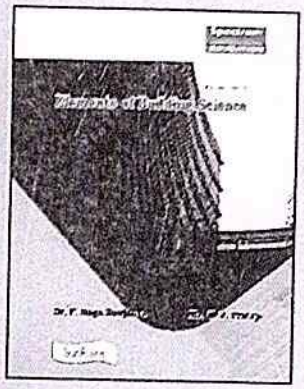
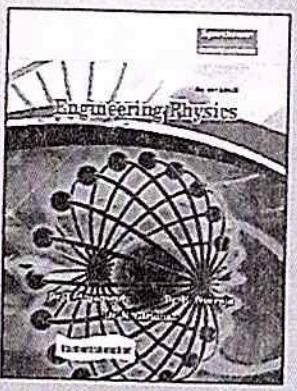

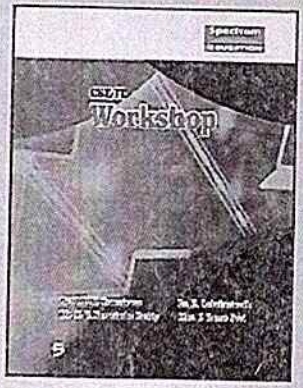

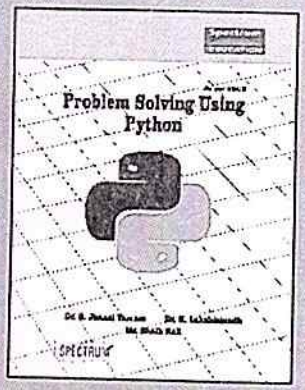

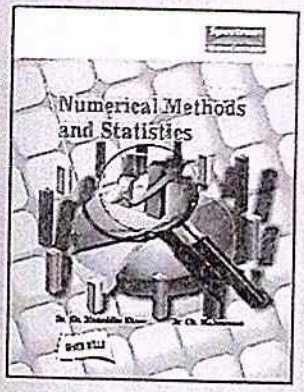

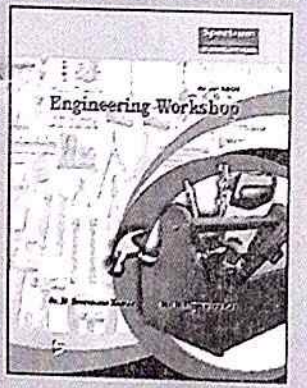

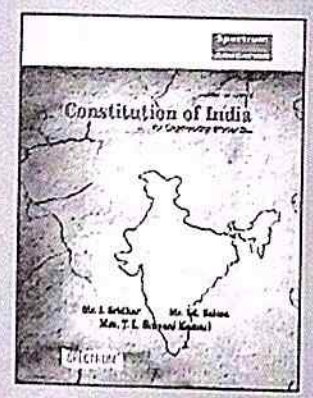

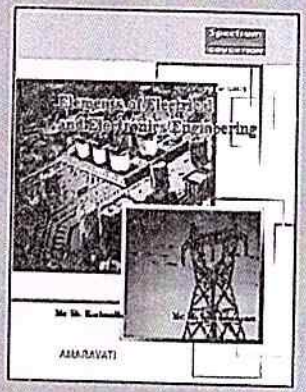

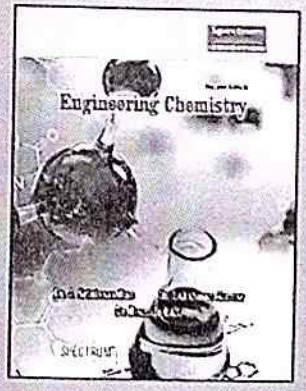

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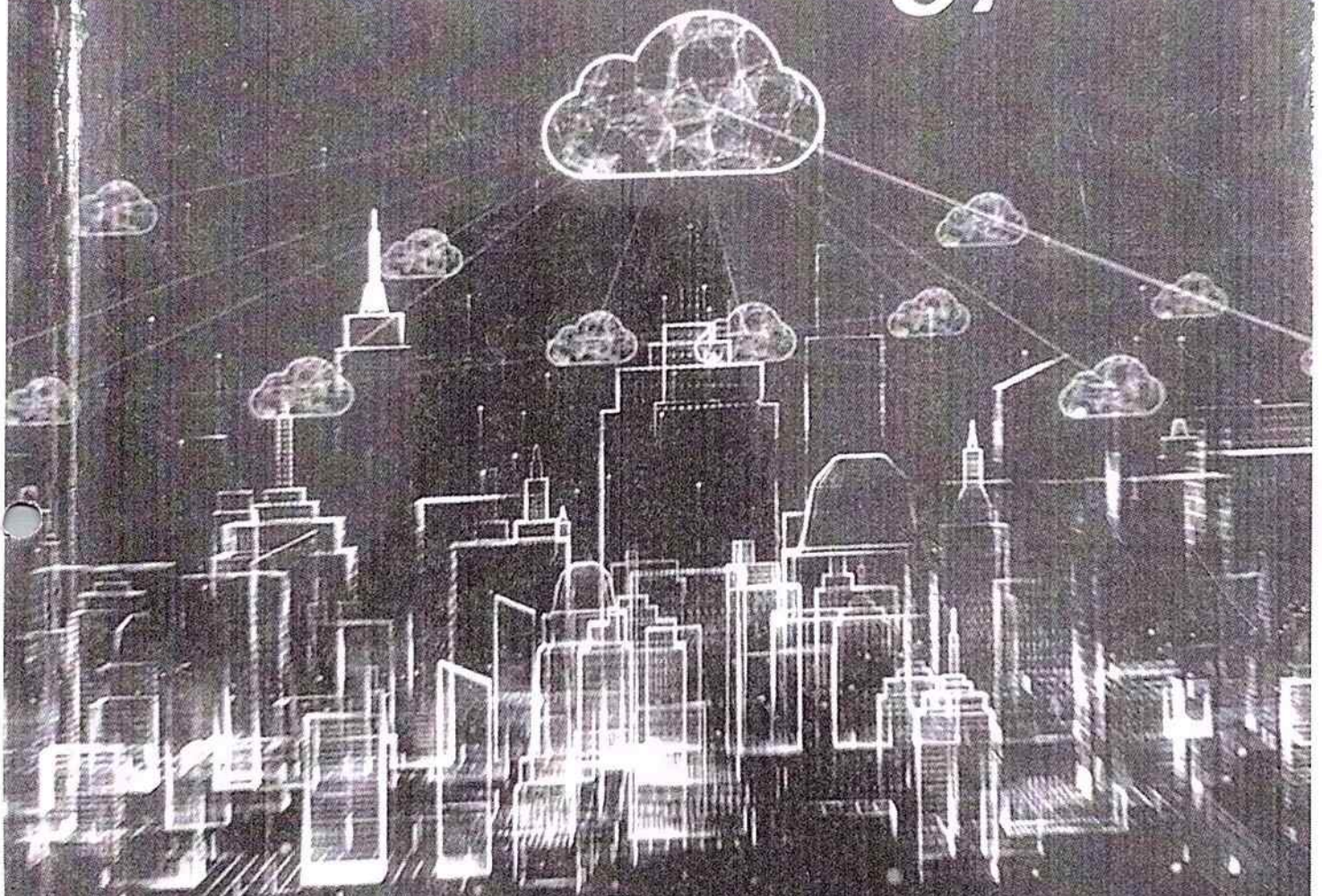

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Authors

Dr. Ganesh Kumar R

Rituraj Jain

Mr. Amit Shrivastava

Dr S.V.N. Sreenivasu

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Dr. Ganesh Kumar R. Associate Professor, Department of Computer Science and Engineering, School of Engineering and Technology, CHRIST (Deemed to be University), Mysore Road, Kanmanike, Kumbalgodu, Bangalore – 560 074

Rituraj Jain, Lecturer, Department of Electrical and Computer Engineering, Wollega University, Nekemte, Ethiopia

Mr. Amit Shrivastava, Assistant Professor, Department of Computer Science Engineering, Swami Vivekanand College of Engineering, Khandwa Road, Near Tol naka, Vivekanand Knowledge City, INDORE, 452020

Dr S.V.N.Sreenivasu, Professor Department of Computer Science and Engineering, Narasaraopeta Engineering College (AUTONOMOUS), Narasaraopet, Guntur, Andhra Pradesh

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Contents

Chapter 1	Introduction	1-15
Chapter 2	Cloud Infrastructure Mechanisms	16-33
Chapter 3	Cloud Deployment Models	34-55
Chapter 4	Cloud Service Models	56-80
Chapter 5	Technological Drivers for Cloud Computing	81-143
Chapter 6	Open-Source Support for Cloud	144-167
	References	168
	Glossary	169-178

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About the Authors



Dr. Ganesh Kumar R received the M.E.degree and Ph.D. in Computer Science and Engineering from Sathyabama University, Chennai in 2007 and 2015 respectively. He has 22 years of Teaching experience. Currently working as Associate Professor in CHRIST (Deemed to be University), School of Engineering and Technology, Kengeri Campus, Bangalore.
His research interest includes Data Science, Cloud Computing, Signal Processing and Image processing. Dr. Ganesh Kumar R is also member in ISTE, IAENG and CCNA Certified Instructor. He has more than 20publications in reputed journals.



Mr. Rituraj Jain is working as a Lecture in Department of Electrical & Computer Engineering at Wollega University, Nekemte – Ethiopia since 2015. He has total 18 years of teaching experience in different colleges and universities. He has published Indian and International patents and number of research papers in international journal as well as presented at international conferences. His areas of interest include Machine Learning,
Cloud Computing, Design and Analysis of Algorithms, Software Engineering, Database Management Systems, E-Commerce, Theory of Computation, and Software Project Management. He is also an Oracle Database SQL Certified Expert and Cloud U Certification from Cloud University Sponsored by Rackspace Hosting. He is also associated with professional technical bodies like Indian Society of Technical Education (ISTE), Computer Science Teachers Association (CSTA), Academy & Industry Research Collaboration Center (AIRCC), International Association of Computer Science and Information Technology (IACSIT), International Association of Engineers (IAENG).



Mr. Mr. Amit Shrivastava has Received his ME (2011) from IET, DAVV Indore, and BE,IES IPS Academy Indore(2006), from RGPV Bhopal. He has more than 10 years of Teaching Experience. He is working as Assistant Professor in the Department of Computer Science Engineering in Swami Vivekanand College of Engineering Indore.
He has published National and International patents and number of research papers in international journal as well as presented at international conferences. His areas of interest Machine Learning, Cloud Technology, Data Science, Blockchain Technology.



Dr S.V.N.Sreenivasu has completed Ph.D in Computer Science and Engineering from Acharya Nagarjuna University, Guntur, and Completed two Master of Technologies in Computer Science and Engineering from Jawaharlal Nehru Technological University,Hyderabad&Information Technology from Punjabi University, Patiala and Master of Computer Application from Bharathidasan University, Thiruvananthapuram. He is having 19 years of Experience in Teaching and he worked in various positions like Principal, Vice Principal, HoD in various Engineering Colleges. He is currently working as a Professor in Computer Science and Engineering, Narasaraopeta Engineering College(AUTONOMOUS), Narasaraopet, Guntur Dt, Andhra Pradesh. He is also amember of IEEE, IAENG and MIET. He published 95 research papers in various International Journals (SCOPUS, SCI indexed) & peer reviewed National Reputed Journals. He guided 10 Ph.D Scholars and presently guiding 3 Research scholars in Cloud Computing, Machine Learning and Natural Language Processing. He Received the Award of Excellence in Research from National Faculty Award in the year 2021-22, Dr Sreenivasu have filed and published more than 10 National and International Patents and granted 2 International Patents.

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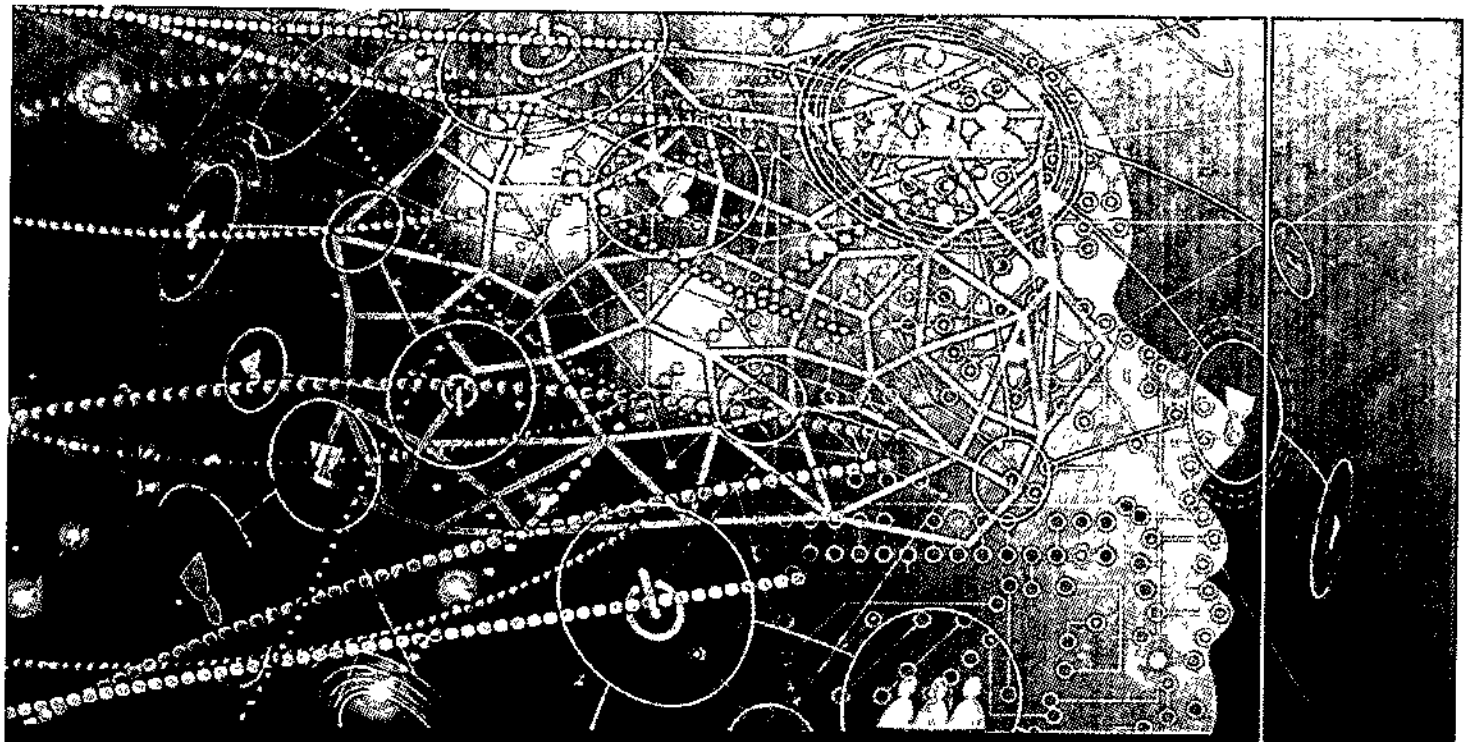

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Applications and New Opportunities

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Contents

Preface vii
About the Editors ix
Contributors xi

Chapter 1 Optimization of Wireless Sensor Networks using Bio-Inspired Algorithm 1

Ayusee Swain, K. P. Swain, G. Palai, and Soumya Ranjan Nayak

Chapter 2 An Improved Genetic Algorithm with Haar Lifting for Optimal Sensor Deployment in Target Covers Based Wireless Sensor Networks 25

T. Ganesan and Pothuraju Rajarajeswari

Chapter 3 Lifetime Enhancement of Wireless Sensor Network Using Artificial Intelligence Techniques 45

Jayashree Dev and Jibitesh Mishra

Chapter 4 Research Issues of Information Security Using Blockchain Technique in Multiple Media WSNs: A Communication Technique Perceptive 65

Nihar Ranjan Pradhan and Akhilendra Pratap Singh

Chapter 5 Modified Artificial Fish Swarm Optimization Based Clustering in Wireless Sensor Network 77

Biswa Mohan Sahoo, Ramesh Chandra Sahoo, Nabanita Paul, Abhinav Tomar, and Ranjeet Kumar Rout

Chapter 6 Survey: Data Prediction Model in Wireless Sensor Networks Using Machine Learning and Optimization Methods 89

S. Ramalingam, K. Baskaran, and Umashankar Subramaniam

Chapter 7 Strategic Sink Mobility Based on Particle Swarm Optimization in Wireless Sensor Network 105

Ramandeep Kaur and Roop Lal Sharma

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CONTENTS

CERTIFICATE		(i)
ACKNOWLEDGEMENTS		(ii)
LIST OF FIGURES		(iii)
LIST OF TABLES		(vii)
SYNOPSIS		(ix)

CHAPTER	DESCRIPTION	PAGE NO
1	**INTRODUCTION**	1
2	**CREEP OF METALS**	4
2.1	Introduction	
2.2	Phases of creep	
2.3	Need of creep analysis	
3	**MATERIAL CHARACTERIZATION**	8
3.1	Introduction	
3.2	Creep laws	
3.3	Determination of creep constants	
3.4	Weighted least square	
3.5	Computational procedure	
3.6	Application to bolt material	
3.7	Conclusions	
4	**STRESS RELAXATION**	27
4.1	Introduction	
4.2	Internal and external hindrance	
4.3	Computing stress relaxation	
4.3.1	Model-1 (Varying young's modulus)	
4.3.2	Model-2 (Creep curves)	
4.3.3	Model-3 (Integration approach)	
4.3.4	Model-4 (Incremental approach)	
4.3.5	Model-5 (FE approach using ANSYS)	
4.4	Conclusions	

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5	**CHECK FOR CONSISTENCY USING LARSEN MILLER PARAMETER**	54
5.1.	Introduction	
5.2.	Larsen Miller Parameter	
5.3.	Consistency in creep strain	
5.4	Consistency in stress relaxation	
5.	Conclusions	
6.	**RELAXATION IN PRESENCE OF STRESS AND TEMPERATURE GRADIENT**	72
6.1	Introduction	
6.2	FE model	
6.3	FE analyses	
6.4	Conclusions	
7.	**RELAXATION OF BOLTED JOINTS**	108
7.1	Introduction	
7.2	FE model of bolt	
7.3	Effect of flange	
7.4	Effect of creep of flange	
7.5	Conclusions	
8	**CONCLUSIONS**	127
	REFERENCES	130
	APPENDICES	
I	Spread-sheet based approach for evaluation of Creep Constants	
II	Details of material composition, various properties, And creep and relaxation data	
III	FORTRAN programs for three creep laws	
IV	ANSYS macro for uniaxial	
V	ANSYS macro for biaxial	
VI	ANSYS macro for bolt	

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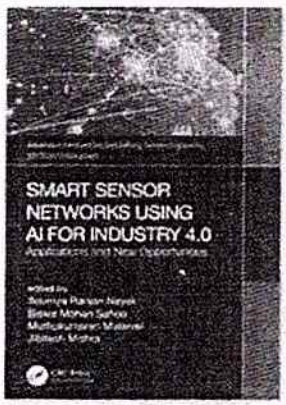

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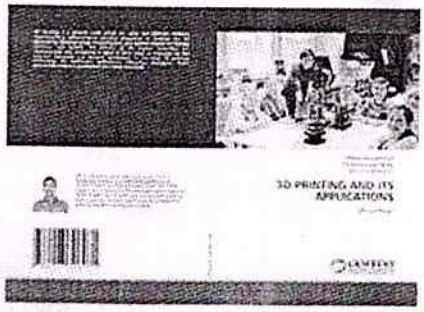

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