3.4.3

3.4.3 Details of research papers per teacher in CARE Journals notified on UGC website during the year 2024-25						
Name of the Author(s)	Department of the Author(s)	Title of the Paper	Name of the Journal	Month and Year of publication	ISSN	Link to the notification in UGC enlistment of the Journal
Dr.B.Venkata Siva	ME	Exploring the spectroscopic and structural properties of B_2O_3 ZnF_2 CaF_2 Al_2O_3 glass matrices doped with Sm^{3+} ions	Applied Physics	10-05-2025	Volume 131, , Article-434	https://www.researchgate.net/publication/391635721_Exploring_the_spectroscopic_and_structural_properties_of_BO-ZnF-CaF-AlO_glass_matrices_doped_with_Sm_ions
D. Jagadish; D. Raghavendra; R. Jagadeesh; P. Raminaidu; A. Pavan Kumar; T. Ashok Kumar.	ME	Assessment of optimization methods for both conventional and double condensing chamber solar stills.	AIP conference Proceedings	03,October	Vol: 3325, Issue: 1, 040046 (2025)	https://pubs.aip.org/aip/acp/article/3325/1/040046/3366084/Assessment-of-optimization-methods-for-both
Suneel Donthamsetty; Penugonda Suresh Babu; M. V. Ramana; D. Ramajogi Naidu; Kandru John Babu; Kiran Chand Kopila	ME	Calculating the tensile strength of EN8 steel by using cryogenic treatment	AIP conference Proceedings	03,October	Vol: 3325, Issue: 1, 040046 (2025)	https://pubs.aip.org/aip/acp/article-abstract/3325/1/040016/3366030/Calculating-the-tensile-strength-of-EN8-steel-by?redirectedFrom=fulltext
Venkannababu Mendi; Venkata Siva Bathula; D. Ramajogi Naidu; Pisini Raminaidu; Sekhar Chinthamreddy; Venkaiah Mandula	ME	Strength of rotar blade frequency of helicopter using ANSYS dynamic and harmonic analysis for noise reduction	AIP conference Proceedings	03,October	Vol: 3325, Issue: 1, 040046 (2025)	https://pubs.aip.org/aip/acp/article/3325/1/020005/3365935/Strength-of-rotar-blade-frequency-of-helicopter
Penugonda Suresh Babu; Suneel Donthamsetty; B. Rama Krishna; D. Appa Rao; Kiran Chand Kopila; Kandru John Babu	ME	An assessment of tensile and its impact on characteristics of hybrid composites using woven fabrics composed of basalt, jute and sisal fiber.	AIP conference Proceedings	03,October	Vol: 3325, Issue: 1, 040046 (2025)	https://pubs.aip.org/aip/acp/article/3325/1/040029/3366022/An-assessment-of-tensile-and-its-impact-on

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Venkata Siva Bathula; Venkannababu Mendi; D. Appa Rao; Rapaka Jagadeesh; Venkaiah Mandula; Sekhar Chinthamreddy	ME	ZnO, AL2O3, and SiC particles reinforced electroless Ni-P duplex coatings comparative microhardness analysis Available to Purchase	AIP conference Proceedings	03,October	Vol: 3325, Issue: 1, 040046 (2025)	https://pubs.aip.org/aip/acp/article/3325/1/030020/3365985/ZnO-AL2O3-and-SiC-particles-reinforced-electroless
P. Sravani; D. Jagadish; P. Raminaidu; R. Jagadeesh; D. Raghavendra; T. Ashok Kumar	ME	Exploration on the development and fabrication of thermoelectric module-based quick water freezers	AIP conference Proceedings	03,October	Vol: 3325, Issue: 1, 040046 (2025)	https://pubs.aip.org/aip/acp/article/3325/1/020003/3365937/Exploration-on-the-development-and-fabrication-o
P.Naga sowjanya	civil Engineering	Sustainable alternative materials in light weight concrete	AIP publications	09-Jul-25	Volume 3298, Issue 1	https://pubs.aip.org/aip/acp/article-abstract/3298/1/040002/3352083/Sustainable-alternative-materials-in-light-weight?redirectedFrom=fulltext
SK.Sydha	civil Engineering	Behavior of Self-Compacting Concrete at Various Levels of Replacement to Fine Aggregate by Pond Ash and Quarry Dust	IEEE Xplore	17-Jun-25	ISBN:979-8-3315-3670-1	https://ieeexplore.ieee.org/document/11032637
N. Mahaboob Subhani	civil Engineering	Design of Reinforced Concrete Beams Shear Strength at Blast Loading	SSRN	09-Jan-25	ICOFE-582-2	https://papers.ssrn.com/sol3/papers.cfm?abstract_id=5088865
A.Lakshmi prasanna	civil Engineering	Experimental Study on Partial Replacement of Cement with Marble Powder and Fine Aggregate with Quarry Dust	SSRN	09-Jan-25	ICOFE-585-2	https://papers.ssrn.com/sol3/papers.cfm?abstract_id=5089026
Dr.B.Jhansi Vazram K.Sireesha	IT	An Assessment on the Significance and Advancement of Cloud Security Through the Usage of Privacy-Related Data Sharing .	International Conference on Intelligent Computing and Communication	March,2025	25-33	https://link.springer.com/chapter/10.1007/978-981-96-1267-3_3
Dr.B.Jhansi Vazram	IT	Prediction of Liver Disesase using Machine learning Algorithms	International Conference on Data Science and Applications	2024	10.1007/978-981-99-7817	https://link.springer.com/chapter/10.1007/978-981-99-7817-3_19

Dr.B.Jhansi Vazram	IT	Machine Learning Models for Chronic Renal Disease prediction	International Conference on Data Science and Applications	2024	173-182	https://link.springer.com/chapter/10.1007/978-981-99-7820-5_14
G.Nagendram	IT	Enhancing Breast Cancer Detection: Leveraging Convolutional Neural Networks	IJRASET	July,2024	2321-9653	https://doi.org/10.22214/ijraset.2024.63683
Dr. S.N. Tirumala Rao	CSE	Beyond Deep Features: Fusing Deep Learning with Local Textures for Enhanced Plant Disease Classification	2024 International Conference on Integrated Intelligence and Communication Systems (ICIICS)	05-Feb-25	ISBN:979-8-3315-0496-0	DOI: 10.1109/ICIICS63763.2024.10859927
Dr. S.N. Tirumala Rao	CSE	DeepLearning-Based Tomato Leaf Disease Identification: Enhancing Classification with AlexNet	2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)	09-May-25	979-8-3315-2169-1	DOI: 10.1109/IATMSI64286.2025.10984969
Dr. S.N. Tirumala Rao	CSE	Fake Profile Detection Using Machine Learning	2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)	09-May-25	979-8-3315-2169-1	DOI: 10.1109/IATMSI64286.2025.10985667
Dr. S.V.N. Sreenivasu	CSE	LOSSY AND LOSSLESS SOURCE CODING INNOVATIONS FOR NEXT-GENERATION MILLIMETER-WAVE AND TERAHERTZ COMMUNICATIONS	Journal of Environmental Protection and Ecology	14-Mar-25	1094–1104	
Dr. S.V.N. Sreenivasu	CSE	Integrating Homomorphic Encryption with Blockchain Technology for Machine Learning Applications	Journal of Machine and Computing	Jan-25	2788-7669	doi: 10.53759/7669/jmc202505031.
Dr. S.V.N. Sreenivasu	CSE	Experimentation and Testing of IoT Based System for Enhancement of Chemical Laboratory Safety for Prevention of Accidents	*2024 First International Conference on Innovations in Communications, Electrical and Computer Engineering (ICICEC)*	03-May-25	9781003610717	https://doi.org/10.1201/9781003610717
Dr. S.V.N. Sreenivasu	CSE	Next-Gen Attendance System	*2024 First International Conference on Innovations in Communications, Electrical and Computer Engineering (ICICEC)*	03-May-25	9781003641537	https://doi.org/10.1201/9781003641537

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Dr. S.V.N. Sreenivasu	CSE	Automated Chest X-Ray Diagnosis with Deep Ensemble Models: A Focus on COVID-19 and Pneumonia Detection	2024 2nd International Conference on Signal Processing, Communication, Power and Embedded System (SCOPES)	16-May-25	979-8-3315-0645-2	DOI: 10.1109/SCOPES64467.2024.10991921
Dr. S.V.N. Sreenivasu	CSE	Rainfall Prediction Using Machine Learning	2024 2nd International Conference on Recent Trends in Microelectronics, Automation, Computing and Communications Systems (ICMACC)	26-Feb-25	979-8-3503-6658-7	DOI: 10.1109/ICMACC62921.2024.10894486
Dr. S.V.N. Sreenivasu	CSE	Harnessing RNN for Enhanced Hate Speech Detection in Social Media	2024 International Conference on Integrated Intelligence and Communication Systems (ICIICS)	05-Feb-25	ISBN:979-8-3315-0496-0	DOI: 10.1109/ICIICS63763.2024.10859351
Dr. S.V.N. Sreenivasu	CSE	Hand Gesture Recognition: Enhancing Accuracy and Precision with Deep Learning	2024 International Conference on Integrated Intelligence and Communication Systems (ICIICS)	05-Feb-25	ISBN:979-8-3315-0496-0	DOI: 10.1109/ICIICS63763.2024.10859441
Dr. S.V.N. Sreenivasu	CSE	ResNet-CNN Model for Plant Disease Classification for E-Agriculture Applications	2024 International Conference on Intelligent Algorithms for Computational Intelligence Systems (IACIS)	24-Oct-24	ISBN:979-8-3503-6066-0	DOI: 10.1109/IACIS61494.2024.10722020
Dr. S.V.N. Sreenivasu	CSE	Algorithmic Insights into Predicting Hypertension Using Health Data in Cloud-Based Environments	*International Journal of Intelligent Systems and Applications in Engineering*	26.03.2024	ISSN: 2147 - 6799	https://www.ijisae.org/index.php/IJISAE/article/view/5340
Dr. S.V.N. Sreenivasu	CSE	Stress Detection Using Machine Learning and NLP Over Social Interactions	*Second International Conference on Advances in Information Technology (ICAIT)*	Oct-24	979-8-3503-8387-4	doi: 10.1109/ICAIT61638.2024.10690542.
Dr. S.V.N. Sreenivasu	CSE	Automatic Attendance Management System Using CNN	2024 4th International Conference on Artificial Intelligence and Signal Processing (AISP)	Nov-24	979-8-3503-5065-4	DOI: 10.1109/AISP61711.2024.10870740
Dr. S.V.N. Sreenivasu	CSE	Boosting Network Intrusion Detection with Two-Level Ensemble Learning and Knowledge Distillation Approaches	2024 2nd International Conference on Signal Processing, Communication, Power and Embedded System (SCOPES)	16-May-25	979-8-3315-0645-2	DOI: 10.1109/SCOPES64467.2024.10990972
Dr. K. Lakshminadh	CSE	An Improved and More Effective FSPC-Based Cloud Consumer Legality Process for Protected Data	Computing, Communication and Learning	01-Feb-25	978-3-031-79041-6	https://doi.org/10.1007/978-3-031-79041-6_33
Dr. K. Lakshminadh	CSE	Ensemble-Based Transfer Learning for Multi-Class Plant Disease Detection Using VGG16, ResNet50, and Xception Models	2024 International Conference on IoT Based Control Networks and Intelligent Systems (ICICNIS)	10-Jan-25	ISBN:979-8-3315-1809-7	DOI: 10.1109/ICICNIS64247.2024.10823254

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Dr. K. Lakshminadh	CSE	Unveiling the Potential of Deep Learning: A Multifaceted Approach to Pulmonary Disease Detection and Clinical Integration	2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)	09-May-25	979-8-3315-2170-7	DOI: 10.1109/IATMSI64286.2025.10984573
Dr. K. Lakshminadh	CSE	Advanced Pest Identification: An Efficient Deep Learning Approach Using VGG Networks	*IATMSI-2025*	09-May-25	979-8-3315-2169-1	https://ieeexplore.ieee.org/document/10984619
Dr. S. Siva Nageswara Rao	CSE	Rainfall Prediction Using Machine Learning	2024 2nd International Conference on Recent Trends in Microelectronics, Automation, Computing and Communications Systems (ICMACC)	26-Feb-25	979-8-3503-6658-7	DOI: 10.1109/ICMACC62921.2024.10894486
Dr. S. Siva Nageswara Rao	CSE	Generalizing Vehicle Manoeuvre Prediction Across Diverse Datasets	2024 International Conference on Emerging Research in Computational Science (ICERCS)	27-Feb-25	979-8-3315-3497-4	DOI: 10.1109/ICERCS63125.2024.10895692
Dr. S. Siva Nageswara Rao	CSE	Beyond Parental Height: A Multi-Model Deep Learning Approach for Personalized Adult Height Prediction	2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)	09-May-25	979-8-3315-2169-1	DOI: 10.1109/IATMSI64286.2025.10985098
Dr. S. Siva Nageswara Rao	CSE	Improving Passenger Experience: Predicting Airline Delays Through Machine Learning	2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)	09-May-25	979-8-3315-2169-1	DOI: 10.1109/IATMSI64286.2025.10985536
Dr. S. Siva Nageswara Rao	CSE	Advanced Water Quality Prediction: Leveraging Genetic Optimization and Machine Learning	2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)	10-May-25	979-8-3315-2169-2	DOI: 10.1109/IATMSI64286.2025.10984615
Dr. Sireesha moturi	CSE	Thyroid Disease Identification Using Machine Learning	*2024 First International Conference on Innovations in Communications, Electrical and Computer Engineering (ICICEC)*	03-May-25	9781003641537	https://doi.org/10.1201/9781003641537
Dr. Sireesha moturi	CSE	Web-Based Early Stroke Detection Using Machine Learning Approaches with Explainable Insights	*2024 First International Conference on Innovations in Communications, Electrical and Computer Engineering (ICICEC)*	03-May-25	9781003641537	https://doi.org/10.1201/9781003641537

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Dr. Sireesha motui	CSE	Next-Gen Attendance System	*2024 First International Conference on Innovations in Communications, Electrical and Computer Engineering (ICICEC)*	03-May-25	9781003641537	https://doi.org/10.1201/9781003641537
Dr. Sireesha motui	CSE	Explainable Fetal Ultrasound Classification with CNN and MLP Models	2024 First International Conference on Innovations in Communications, Electrical and Computer Engineering (ICICEC)	30-Dec-24	ISBN:979-8-3503-7651-7	DOI: 10.1109/ICICEC62498.2024.10808626
Dr. M. Sireesha	CSE	Text-Based Emotion Analysis: Approaches and Evaluations	*IATMSI*	09-May-25	979-8-3315-2169-1	DOI: 10.1109/IATMSI64286.2025.10984985
Dr. M. Sireesha	CSE	Enhancing Wine Quality Prediction Through Machine Learning Techniques	*IATMSI*	09-May-25	979-8-3315-2169-1	DOI: 10.1109/IATMSI64286.2025.10984544
Dr. M. Sireesha	CSE	Deep Learning Framework for Early Fire and Smoke Detection	2024 2nd International Conference on Signal Processing, Communication, Power and Embedded System (SCOPES)	16-May-25	979-8-3315-0645-2	DOI: 10.1109/SCOPES64467.2024.10991076
Dr. M. Sireesha	CSE	Advanced Pest Identification: An Efficient Deep Learning Approach Using VGG Networks	*IATMSI-2025*	09-May-25	979-8-3315-2169-1	https://ieeexplore.ieee.org/document/10984619
Dr. M. Sireesha	CSE	Advanced Water Quality Prediction: Leveraging Genetic Optimization and Machine Learning	2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)	10-May-25	979-8-3315-2169-2	DOI: 10.1109/IATMSI64286.2025.10984615
Dr. M. Sireesha	CSE	Deep Learning-Based Tomato Leaf Disease Identification: Enhancing Classification with AlexNet	2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)	09-May-25	979-8-3315-2169-1	DOI: 10.1109/IATMSI64286.2025.10984969
Dr. M. Sireesha	CSE	CNN-Driven Detection of Abnormalities in PCG Signals Using Gammatonegram Analysis	2024 First International Conference for Women in Computing (InCoWoCo)	06-Feb-25	979-8-3315-1894-3	DOI: 10.1109/InCoWoCo64194.2024.10863151
Dr. M. Sireesha	CSE	Enhanced Lung Cancer Detection Using Deep Learning Ensemble Approach	2024 First International Conference for Women in Computing (InCoWoCo)	06-Feb-25	979-8-3315-1894-4	DOI: 10.1109/InCoWoCo64194.2024.10863245

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Dr. M. Sireesha	CSE	Enhanced Multi-Class Classification of Kidney Abnormalities Using VGG16 and Advanced CT Image Analysis Techniques	2024 2nd International Conference on Signal Processing, Communication, Power and Embedded System (SCOPES)	16-May-25	979-8-3315-0645-2	DOI: 10.1109/SCOPES64467.2024.10990409
Dr. M. Sireesha	CSE	Detecting Sarcasm Across Headlines and Text	2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)	10-May-25	979-8-3315-2169-2	DOI: 10.1109/IATMSI64286.2025.10984543
Dr. M. Sireesha	CSE	Fake Profile Detection Using Machine Learning	2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)	09-May-25	979-8-3315-2169-1	DOI: 10.1109/IATMSI64286.2025.10985667
K.V. Narasimha reddy	CSE	Explainable Fetal Ultrasound Classification with CNN and MLP Models	2024 First International Conference on Innovations in Communications, Electrical and Computer Engineering (ICICEC)	30-Dec-24	979-8-3503-7651-7	DOI: 10.1109/ICICEC62498.2024.10808626
Dr. Rama Krishna Eluri	CSE	Enhancing Wine Quality Prediction Through Machine Learning Techniques	*IATMSI*	09-May-25	979-8-3315-2169-1	DOI: 10.1109/IATMSI64286.2025.10984544
Dr. Rama Krishna Eluri	CSE	Text-Based Emotion Analysis: Approaches and Evaluations	*IATMSI*	09-May-25	979-8-3315-2169-1	DOI: 10.1109/IATMSI64286.2025.10984985
Dr. Rama Krishna Eluri	CSE	Multimodal: A Text-Image based Cyber-Bullying Detecting with Deep Learning	*IATMSI*	09-May-25	979-8-3315-2169-1	DOI: 10.1109/IATMSI64286.2025.10985245
Dr. Rama Krishna Eluri	CSE	Compact Pyramidal dense mixed attention network for Diabetic retinopathy severity prediction under deep learning	*Biomedical Signal Processing and Control*	Oct-24	106960	https://doi.org/10.1016/j.bspc.2024.106960
Dr. Rama Krishna Eluri	CSE	Optimizing the Powerhouse: Fine-Tuning CNNs for Superior Lung Disorder Detection	2024 First International Conference on Innovations in Communications, Electrical and Computer Engineering (ICICEC)	30-Dec-24	979-8-3503-7652-4	DOI: 10.1109/ICICEC62498.2024.10808691
Dr. Rama Krishna Eluri	CSE	A Scrutiny of Machine Learning Methods for the Detection and Identification of Cyber Intrusion	*2024 International Conference on Advances in Modern Age Technologies for Health and Engineering Science (AMATHE)*	12-Jul-24	979-8-3503-7157-4	doi: 10.1109/AMATHE61652.2024

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Dr. Rama Krishna Eluri	CSE	Improving Early Detection of Diabetic Retinopathy: A Hybrid Deep Learning Model Focused on Lesion Identification	*2024 First International Conference on Innovations in Communications, Electrical and Computer Engineering (ICICEC)*	30-Dec-24	979-8-3503-7652-4	doi: 10.1109/ICICEC62498.2024.10808807.
N. Vijay Kumar	CSE	Unveiling Student Success: A Multifaceted Approach with Learning Coefficients and Beyond	2024 International Conference on Integrated Intelligence and Communication Systems (ICIICS)	05-Feb-25	979-8-3315-0496-0	DOI: 10.1109/ICIICS63763.2024.10859995
N. Vijay Kumar	CSE	Chronic Kidney Disease Prediction Using Machine Learning and Deep Learning Models	2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)	09-May-25	979-8-3315-2169-1	DOI: 10.1109/IATMSI64286.2025.10985476
N. Vijay Kumar	CSE	Advanced Machine Learning Approaches for Infant Cry Classification using Audio Feature Extraction	2024 International Conference on Integrated Intelligence and Communication Systems (ICIICS)	05-Feb-25	979-8-3315-0497-7	DOI: 10.1109/ICIICS63763.2024.10859873
N. Vijay Kumar	CSE	Enhanced Multi-Class Classification of Kidney Abnormalities Using VGG16 and Advanced CT Image Analysis Techniques	2024 2nd International Conference on Signal Processing, Communication, Power and Embedded System (SCOPES)	16-May-25	979-8-3315-0645-2	DOI: 10.1109/SCOPES64467.2024.10990409
K.V. Narasimha reddy	CSE	Unveiling the Power of Classic ML Techniques in Text Classification: A Comparative Approach	*2024 First International Conference on Innovations in Communications, Electrical and Computer Engineering (ICICEC)*	03-May-25	9781003641537	https://doi.org/10.1201/9781003641537
K.V. Narasimha reddy	CSE	Ensemble-Based Transfer Learning for Multi-Class Plant Disease Detection Using VGG16, ResNet50, and Xception Models	2024 International Conference on IoT Based Control Networks and Intelligent Systems (ICICNIS)	10-Jan-25	ISBN:979-8-3315-1809-7	DOI: 10.1109/ICICNIS64247.2024.10823254
K.V. Narasimha reddy	CSE	Adaptive Intrusion Detection in CAN - Based Vehicular Networks using TransferLearning for Evolving Threats	2024 First International Conference on Innovations in Communications, Electrical and Computer Engineering (ICICEC)	30-Dec-24	ISBN:979-8-3503-7651-7	DOI: 10.1109/ICICEC62498.2024.10808423
K.V. Narasimha reddy	CSE	Explainable Fetal Ultrasound Classification with CNN and MLP Models	2024 First International Conference on Innovations in Communications, Electrical and Computer Engineering (ICICEC)	30-Dec-24	ISBN:979-8-3503-7651-7	DOI: 10.1109/ICICEC62498.2024.10808626

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K.V. Narasimha reddy	CSE	ResNet-CNN Model for Plant Disease Classification for E-Agriculture Applications	2024 International Conference on Intelligent Algorithms for Computational Intelligence Systems (IACIS)	24-Oct-24	ISBN:979-8-3503-6066-0	DOI: 10.1109/IACIS61494.2024.10722020
K.V. Narasimha reddy	CSE	Brain tumor detection using deep learning techniques	*AIP Conf. Proc.* 3162, 020072 (2025)	14-Feb-25	20072	https://doi.org/10.1063/5.0242382
K.V. Narasimha reddy	CSE	A Novel Proxy Re-Encryption Technique for Secure Data Sharing in Cloud Environment	2024 International Conference on Advances in Data Engineering and Intelligent Computing Systems (ADICS)	23-May-24	979-8-3503-6482-8	DOI: 10.1109/ADICS58448.2024.10533626
K.V. Narasimha reddy	CSE	Multimodal: A Text-Image based Cyber-Bullying Detecting with Deep Learning	*IATMSI*	09-May-25	979-8-3315-2169-1	DOI: 10.1109/IATMSI64286.2025.10985245
K.V. Narasimha reddy	CSE	Harnessing Machine Learning for Improved Heart Disease Prediction	2024 IEEE 11th Uttar Pradesh Section International Conference on Electrical, Electronics and Computer Engineering (UPCON)	12-May-25	2687-7767	DOI: 10.1109/UPCON62832.2024.10983291
K.V. Narasimha reddy	CSE	Explainable Fetal Ultrasound Classification with CNN and MLP Models	2024 First International Conference on Innovations in Communications, Electrical and Computer Engineering (ICICEC)	30-Dec-24	979-8-3503-7651-7	DOI: 10.1109/ICICEC62498.2024.10808626
Syed Rizwana	CSE	Computer Aided Detection of Breast Cancer Using Bio Inspired Algorithm	2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)	09-May-25	979-8-3315-2169-1	DOI: 10.1109/IATMSI64286.2025.10985427
Syed Rizwana	CSE	Leveraging Deep Learning for enhanced Pneumonia Detection in Chest X - Rays	2024 First International Conference on Innovations in Communications, Electrical and Computer Engineering (ICICEC)	30-Dec-24	979-8-3503-7651-7	DOI:10.1109/ICICEC62498.2024.10808618
Syed Rizwana	CSE	Detecting multimodal cyber-bullying behaviour in social-media using deep learning techniques	The Journal of Supercomputing	12-Dec-24		https://doi.org/10.1007/s11227-024-06772-9
Syed Rizwana	CSE	Early Diagnosis of Lung Cancer Using Hyperparameter-Tuned Machine Learning Models	2024 International Conference on Integrated Intelligence and Communication Systems (ICIICS)	05-Feb-25	979-8-3315-0497-7	DOI: 10.1109/ICIICS63763.2024.10859881
Syed Rizwana	CSE	Enhancing Wine Quality Prediction Through Machine Learning Techniques	*IATMSI*	09-May-25	979-8-3315-2169-1	DOI: 10.1109/IATMSI64286.2025.10984544

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Syed Rizwana	CSE	A Multi-Modality Approach to Breast Cancer Diagnosis: Fusing Ultrasound with Other Imaging Techniques	2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)	09-May-25	979-8-3315-2169-1	DOI: 10.1109/IATMSI64286.2025.10985453
Sk. Rafi	CSE	Classification of Music Genre Using Deep Learning Approaches	2024 4th International Conference on Artificial Intelligence and Signal Processing (AISP)	12-Feb-25	ISBN:979-8-3503-5065-4	DOI: 10.1109/AISP61711.2024.10870721
Sk. Rafi	CSE	Detecting multimodal cyber-bullying behaviour in social-media using deep learning techniques	The Journal of Supercomputing	12-Dec-24		https://doi.org/10.1007/s11227-024-06772-9
Sk. Rafi	CSE	Rainfall Prediction Using Machine Learning	2024 2nd International Conference on Recent Trends in Microelectronics, Automation, Computing and Communications Systems (ICMACC)	26-Feb-25	979-8-3503-6658-7	DOI: 10.1109/ICMACC62921.2024.10894486
Sk. Rafi	CSE	Automatic Attendance Management System Using CNN	2024 4th International Conference on Artificial Intelligence and Signal Processing (AISP)	Nov-24	979-8-3503-5065-4	DOI: 10.1109/AISP61711.2024.10870740
Sk. Rafi	CSE	Multimodal: A Text-Image based Cyber-Bullying Detecting with Deep Learning	*IATMSI*	09-May-25	979-8-3315-2169-1	DOI: 10.1109/IATMSI64286.2025.10985245
Sk. Rafi	CSE	Unveiling Student Success: A Multifaceted Approach with Learning Coefficients and Beyond	2024 International Conference on Integrated Intelligence and Communication Systems (ICIICS)	05-Feb-25	979-8-3315-0496-0	DOI: 10.1109/ICIICS63763.2024.10859995
Sk. Rafi	CSE	Chronic Kidney Disease Prediction Using Machine Learning and Deep Learning Models	2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)	09-May-25	979-8-3315-2169-1	DOI: 10.1109/IATMSI64286.2025.10985476
Sk. Rafi	CSE	Detecting Sarcasm Across Headlines and Text	2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)	10-May-25	979-8-3315-2169-2	DOI: 10.1109/IATMSI64286.2025.10984543
M. Sathyam reddy	CSE	Advanced Machine Learning Approaches for Infant Cry Classification using Audio Feature Extraction	2024 International Conference on Integrated Intelligence and Communication Systems (ICIICS)	05-Feb-25	979-8-3315-0497-7	DOI: 10.1109/ICIICS63763.2024.108

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M. Sathyam reddy	CSE	Detecting Sarcasm Across Headlines and Text	2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)	10-May-25	979-8-3315-2169-2	DOI: 10.1109/IATMSI64286.2025.10984543
D. Venkata reddy	CSE	Unveiling the Potential of Deep Learning: A Multifaceted Approach to Pulmonary Disease Detection and Clinical Integration	2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)	09-May-25	979-8-3315-2170-7	DOI: 10.1109/IATMSI64286.2025.10984573
D. Venkata reddy	CSE	Unveiling Student Success: A Multifaceted Approach with Learning Coefficients and Beyond	2024 International Conference on Integrated Intelligence and Communication Systems (ICIICS)	05-Feb-25	979-8-3315-0496-0	DOI: 10.1109/ICIICS63763.2024.10859995
D. Venkata reddy	CSE	Computer Aided Detection of Breast Cancer Using Bio Inspired Algorithm	2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)	09-May-25	979-8-3315-2169-1	DOI: 10.1109/IATMSI64286.2025.10985427
D. Venkata reddy	CSE	A Novel Proxy Re-Encryption Technique for Secure Data Sharing in Cloud Environment	2024 International Conference on Advances in Data Engineering and Intelligent Computing Systems (ADICS)	23-May-24	979-8-3503-6482-8	DOI: 10.1109/ADICS58448.2024.10533626
D. Venkata reddy	CSE	Early Diagnosis of Lung Cancer Using Hyperparameter-Tuned Machine Learning Models	2024 International Conference on Integrated Intelligence and Communication Systems (ICIICS)	05-Feb-25	979-8-3315-0497-7	DOI: 10.1109/ICIICS63763.2024.10859881
D. Venkata reddy	CSE	Unveiling the Power of Classic ML Techniques in Text Classification: A Comparative Approach	*2024 First International Conference on Innovations in Communications, Electrical and Computer Engineering (ICICEC)*	03-May-25	9781003641537	https://doi.org/10.1201/9781003641537
D. Venkata reddy	CSE	CNN-Driven Detection of Abnormalities in PCG Signals Using Gammatonegram Analysis	2024 First International Conference for Women in Computing (InCoWoCo)	06-Feb-25	979-8-3315-1894-3	DOI: 10.1109/InCoWoCo64194.2024.10863151
D. Venkata reddy	CSE	Beyond Deep Features: Fusing Deep Learning with Local Textures for Enhanced Plant Disease Classification	2024 International Conference on Integrated Intelligence and Communication Systems (ICIICS)	05-Feb-25	ISBN:979-8-3315-0496-0	DOI: 10.1109/ICIICS63763.2024.10859927
D. Venkata reddy	CSE	Optimized Deep Learning for Multi-Class Retinal Disease Classification Using ResNet-101	2024 First International Conference for Women in Computing (InCoWoCo)	06-Feb-25	ISBN:979-8-3315-1894-3	DOI: 10.1109/InCoWoCo64194.2024.10863

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D. Venkata reddy	CSE	Harnessing RNN for Enhanced Hate Speech Detection in Social Media	2024 International Conference on Integrated Intelligence and Communication Systems (ICIICS)	05-Feb-25	ISBN:979-8-3315-0496-0	DOI: 10.1109/ICIICS63763.2024.10859351
D. Venkata reddy	CSE	Hand Gesture Recognition: Enhancing Accuracy and Precision with Deep Learning	2024 International Conference on Integrated Intelligence and Communication Systems (ICIICS)	05-Feb-25	ISBN:979-8-3315-0496-0	DOI: 10.1109/ICIICS63763.2024.10859441
D. Venkata reddy	CSE	Ensemble-Based Transfer Learning for Multi-Class Plant Disease Detection Using VGG16, ResNet50, and Xception Models	2024 International Conference on IoT Based Control Networks and Intelligent Systems (ICICNIS)	10-Jan-25	ISBN:979-8-3315-1809-7	DOI: 10.1109/ICICNIS64247.2024.10823254
D. Venkata reddy	CSE	Adaptive Intrusion Detection in CAN - Based Vehicular Networks using TransferLearning for Evolving Threats	2024 First International Conference on Innovations in Communications, Electrical and Computer Engineering (ICICEC)	30-Dec-24	ISBN:979-8-3503-7651-7	DOI: 10.1109/ICICEC62498.2024.10808423
D. Venkata reddy	CSE	Explainable Fetal Ultrasound Classification with CNN and MLP Models	2024 First International Conference on Innovations in Communications, Electrical and Computer Engineering (ICICEC)	30-Dec-24	ISBN:979-8-3503-7651-7	DOI: 10.1109/ICICEC62498.2024.10808626
D. Venkata reddy	CSE	Brain tumor detection using deep learning techniques	*AIP Conf. Proc.* 3162, 020072 (2025)	14-Feb-25	20072	https://doi.org/10.1063/5.0242382
D. Venkata reddy	CSE	Generalizing Vehicle Manoeuvre Prediction Across Diverse Datasets	2024 International Conference on Emerging Research in Computational Science (ICERCS)	27-Feb-25	979-8-3315-3497-4	DOI: 10.1109/ICERCS63125.2024.10895692
D. Venkata reddy	CSE	Advanced Machine Learning Approaches for Infant Cry Classification using Audio Feature Extraction	2024 International Conference on Integrated Intelligence and Communication Systems (ICIICS)	05-Feb-25	979-8-3315-0497-7	DOI: 10.1109/ICIICS63763.2024.10859873
D. Venkata reddy	CSE	A Multi-Modality Approach to Breast Cancer Diagnosis Using Ultrasound with Other Imaging Techniques	2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)	09-May-25	979-8-3315-2169-1	DOI: 10.1109/IATMSI64286.2025.10985453
D. Venkata reddy	CSE	Harnessing Machine Learning for Improved Heart Disease Prediction	2024 IEEE 11th Uttar Pradesh Section International Conference on Electrical, Electronics and Computer Engineering (UPCON)	12-May-25	2687-7767	DOI: 10.1109/UPCON62832.2024.10983291
D. Venkata reddy	CSE	Enhanced Lung Cancer Detection Using Deep Learning Ensemble Approach	2024 First International Conference for Women in Computing (InCoWoCo)	06-Feb-25	979-8-3315-1894-4	DOI: 10.1109/InCoWoCo64194.2024.10863245

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D. Venkata reddy	CSE	Explainable Fetal Ultrasound Classification with CNN and MLP Models	2024 First International Conference on Innovations in Communications, Electrical and Computer Engineering (ICICEC)	30-Dec-24	979-8-3503-7651-7	DOI: 10.1109/ICICEC62498.2024.10808626
SK.K.M. Basha	CSE	Web-Based Early Stroke Detection: A Machine Learning Approach with Explainable Insights	*2024 First International Conference on Innovations in Communications, Electrical and Computer Engineering (ICICEC)*	03-May-25	9781003641537	https://doi.org/10.1201/9781003641537
SK.K.M. Basha	CSE	Leveraging Deep Learning for enhanced Pneumonia Detection in Chest X - Rays	2024 First International Conference on Innovations in Communications, Electrical and Computer Engineering (ICICEC)	30-Dec-24	979-8-3503-7651-7	DOI:10.1109/ICICEC62498.2024.10808618
SK.K.M. Basha	CSE	An Improved and More Effective FSPC-Based Cloud Consumer Legality Process for Protected Data	Computing, Communication and Learning	01-Feb-25	978-3-031-79041-6	https://doi.org/10.1007/978-3-031-79041-6_33
SK.K.M. Basha	CSE	Intelligent Heart Rate Classification with Adaptive Neuro-Fuzzy Inference System Approach	2024 IEEE 4th International Conference on ICT in Business Industry & Government (ICTBIG)	13-Mar-25	979-8-3315-1899-8	DOI: 10.1109/ICTBIG64922.2024.10911734
SK.K.M. Basha	CSE	Early Diagnosis of Lung Cancer Using Hyperparameter-Tuned Machine Learning Models	2024 International Conference on Integrated Intelligence and Communication Systems (ICIICS)	05-Feb-25	979-8-3315-0497-7	DOI: 10.1109/ICIICS63763.2024.10859881
SK.K.M. Basha	CSE	Computer Aided Detection of Breast Cancer Using Bio Inspired Algorithm	2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)	09-May-25	979-8-3315-2169-1	DOI: 10.1109/IATMSI64286.2025.10985427
SK.K.M. Basha	CSE	A Multi-Modality Approach to Breast Cancer Diagnosis Using Ultrasound with Other Imaging Techniques	2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)	09-May-25	979-8-3315-2169-1	DOI: 10.1109/IATMSI64286.2025.10985453
G. Saranya	CSE	Thyroid Disease Identification Using Machine Learning	*2024 First International Conference on Innovations in Communications, Electrical and Computer Engineering (ICICEC)*	03-May-25	9781003641537	https://doi.org/10.1201/9781003641537
G. Saranya	CSE	Optimized Deep Learning for Multi-Class Retinal Disease Classification Using ResNet-101	2024 First International Conference for Women in Computing (InCoWoCo)	06-Feb-25	ISBN:979-8-3315-1894-3	DOI: 10.1109/InCoWoCo64194.2024.10863808

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M. Venkata Rao	CSE	Automated Chest X-Ray Diagnosis with Deep Ensemble Models: A Focus on COVID-19 and Pneumonia Detection	2024 2nd International Conference on Signal Processing, Communication, Power and Embedded System (SCOPES)	16-May-25	ISBN: 979-8-3315-0645-2	DOI: 10.1109/InCoWoCo64194.2024.10863808
M. Venkata Rao	CSE	Classification of Music Genre Using Deep Learning Approaches	2024 4th International Conference on Artificial Intelligence and Signal Processing (AISP)	12-Feb-25	ISBN:979-8-3503-5065-4	DOI: 10.1109/AISP61711.2024.10870721
M. Venkata Rao	CSE	Optimizing the Powerhouse: Fine-Tuning CNNs for Superior Lung Disorder Detection	2024 First International Conference on Innovations in Communications, Electrical and Computer Engineering (ICICEC)	01-Dec-24	979-8-3503-7652-4	DOI: 10.1109/ICICEC62498.2024.10808691
M. Venkata Rao	CSE	Generalizing Vehicle Manoeuvre Prediction Across Diverse Datasets	2024 International Conference on Emerging Research in Computational Science (ICERCS)	27-Feb-25	979-8-3315-3497-4	DOI: 10.1109/ICERCS63125.2024.10895692
M. Venkata Rao	CSE	Beyond Parental Height: A Multi-Model Deep Learning Approach for Personalized Adult Height Prediction	2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)	09-May-25	979-8-3315-2169-1	DOI: 10.1109/IATMSI64286.2025.10985098
T.G. Ramnadh Babu	CSE	Hand Gesture Recognition: Enhancing Accuracy and Precision with Deep Learning	2024 International Conference on Integrated Intelligence and Communication Systems (ICIICS)	05-Feb-25	ISBN:979-8-3315-0496-0	DOI: 10.1109/ICIICS63763.2024.10859441
T.G. Ramnadh Babu	CSE	Boosting Network Intrusion Detection with Two-Level Ensemble Learning and Knowledge Distillation Approaches	2024 2nd International Conference on Signal Processing, Communication, Power and Embedded System (SCOPES)	16-May-25	979-8-3315-0645-2	DOI: 10.1109/SCOPES64467.2024.10990972
T.G. Ramnadh Babu	CSE	Advanced Water Quality Prediction: Leveraging Genetic Optimization and Machine Learning	2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)	10-May-25	979-8-3315-2169-2	DOI: 10.1109/IATMSI64286.2025.10984615
M. Suneetha	CSE	Beyond Deep Features: Fusing Deep Learning with Local Textures for Enhanced Plant Disease Classification	2024 International Conference on Integrated Intelligence and Communication Systems (ICIICS)	05-Feb-25	ISBN:979-8-3315-0496-0	DOI: 10.1109/ICIICS63763.2024.10859927
M. Suneetha	CSE	Deep Learning Framework for Early Fire and Smoke Detection	2024 2nd International Conference on Signal Processing, Communication, Power and Embedded System (SCOPES)	16-May-25	979-8-3315-0645-2	DOI: 10.1109/SCOPES64467.2024.10991076

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M. Suneetha	CSE	DeepLearning-Based Tomato Leaf Disease Identification: Enhancing Classification with AlexNet	2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)	09-May-25	979-8-3315-2169-1	DOI: 10.1109/IATMSI64286.2025.10984969
M. Suneetha	CSE	Fake Profile Detection Using Machine Learning	2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)	09-May-25	979-8-3315-2169-1	DOI: 10.1109/IATMSI64286.2025.10985667
CH. Rajani	CSE	Deep Learning Solutions for Soybean Leaf Infestation: A VGG19-Based Approach	2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)	09-May-25	ISBN:979-8-3315-2170-7	DOI: 10.1109/IATMSI64286.2025.10985548
CH. Rajani	CSE	Next-Gen Attendance System	*2024 First International Conference on Innovations in Communications, Electrical and Computer Engineering (ICICEC)*	03-May-25	9781003641537	https://doi.org/10.1201/9781003641537
CH. Rajani	CSE	Rainfall Prediction Using Machine Learning	2024 2nd International Conference on Recent Trends in Microelectronics, Automation, Computing and Communications Systems (ICMACC)	26-Feb-25	979-8-3503-6658-7	DOI: 10.1109/ICMACC62921.2024.10894486
CH. Rajani	CSE	Harnessing RNN for Enhanced Hate Speech Detection in Social Media	2024 International Conference on Integrated Intelligence and Communication Systems (ICIICS)	05-Feb-25	ISBN:979-8-3315-0496-0	DOI: 10.1109/ICIICS63763.2024.10859351
CH. Rajani	CSE	Stress Detection Using Machine Learning and NLP Over Social Interactions	*Second International Conference on Advances in Information Technology (ICAIT)*	Oct-24	979-8-3503-8487-4	doi: 10.1109/ICAIT61638.2024.10690542.
CH. Rajani	CSE	Automatic Attendance Management System Using CNN	2024 4th International Conference on Artificial Intelligence and Signal Processing (AISP)	Nov-24	979-8-3503-5065-4	DOI: 10.1109/AISP61711.2024.10870740
CH. Rajani	CSE	Unveiling the Potential of Deep Learning: A Multifaceted Approach to Pulmonary Disease Detection and Clinical Integration	2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)	09-May-25	979-8-3315-2170-7	DOI: 10.1109/IATMSI64286.2025.10984573
M. Koteswara Rao	CSE	AI - Driven Alignment of Educational Programs with Industry Needs and Energing Skillsets	ternational Journal of Modern Education and	08-Jun-25		DOI: 10.5815/ijmecs.2025.03.02

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M. Suresh	CSE	AI-driven biomarker discovery for early diagnosis and prognosis in oral oncology	Oral Oncology Reports	09-May-25		https://doi.org/10.1016/j.oor.2025.100749
M. Suresh	CSE	AI - Driven Alignment of Educational Programs with Industry Needs and Energing Skillsets	ternational Journal of Modern Education and	08-Jun-25		DOI: 10.5815/ijmecs.2025.03.02
Y. Chadana	CSE	Streamlined network intrusion detection: Feature selection optimization for higher accuracy and efficiency	ICAECT 2024	Jul-25	9781003515470	https://doi.org/10.1201/9781003515470
Y Chandana	CSE	Text-Based Emotion Analysis: Approaches and Evaluations	*IATMSI*	09-May-25	979-8-3315-2169-1	DOI: 10.1109/IATMSI64286.2025.10984985
Y Chandana	CSE	Improving Passenger Experience: Predicting Airline Delays Through Machine Learning	2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)	09-May-25	979-8-3315-2169-1	DOI: 10.1109/IATMSI64286.2025.10985536
Dr. K. Suresh Babu	CSE	A Novel Approach for Classifying Gliomas from Magnetic Resonance Images Using Image Decomposition and Texture Analysis †	SSIM 2024	May-25	2673-4591	https://doi.org/10.3390/engproc2025087070
Dr. K. Suresh Babu	CSE	Streamlined network intrusion detection: Feature selection optimization for higher accuracy and efficiency	ICAECT 2024	Jul-25		https://doi.org/10.1201/9781003515470
Dr. K. Suresh Babu	CSE	Web-Based Early Stroke Detection: A Machine Learning Approach with Explainable Insights	*2024 First International Conference on Innovations in Communications, Electrical and Computer Engineering (ICICEC)*	01-May-25	9781003641537	https://doi.org/10.1201/9781003641537
Dr. K. Suresh Babu	CSE	Thyroid Disease Identification Using Machine Learning	*2024 First International Conference on Innovations in Communications, Electrical and Computer Engineering (ICICEC)*	03-May-25	9781003641537	https://doi.org/10.1201/9781003641537
Dr. K. Suresh Babu	CSE	Optimized Deep Learning for Multi-Class Retinal Disease Classification Using ResNet-101	Computer Science	06-Feb-25	ISBN:979-8-3315-1894-3	DOI: 10.1109/IaCoWoCo64194.2024.10863808

Dr. K. Suresh Babu	CSE	Design of an integrated model combining recurrent convolutions and attention mechanism for time series prediction	Journal of Super Computing	01-Mar-25	978-981-97-8089-1	https://doi.org/10.1007/s11227-025-07154-5
Dr. K. Suresh Babu	CSE	Adaptive Ensemble of ML Regressors	CIPR 2024	01-Mar-25	978-981-97-8089-1	https://doi.org/10.1007/978-981-97-8090-7
Dr. K. Suresh Babu	CSE	Enhancing E-learning Accessibility through AI (Artificial Intelligence) and Inclusive Design	2025 6th International Conference on Mobile Computing and Sustainable Informatics (ICMCSI)	01-Feb-25	979-8-3315-2267-4	doi:10.1109/ICMCSI64620.2025.10883148
Dr. K. Suresh Babu	CSE	Optimized Deep Learning for Multi-Class Retinal Disease Classification Using ResNet-101	2024 First International Conference for Women in Computing (InCoWoCo)	06-Feb-25	ISBN:979-8-3315-1894-3	DOI: 10.1109/InCoWoCo64194.2024.10863808
Dr. K. Suresh Babu	CSE	Real-Time Traffic Flow Optimization using Adaptive IoT and Data Analytics: A Novel DeepStreamNet Model	2024 4th International Conference on Sustainable Expert Systems (ICSES)	01-Dec-24	979-8-3315-4037-4	DOI: 10.1109/ICSES63445.2024.10763109
Dr. K. Suresh Babu	CSE	Heart Disease Prediction Using Different Machine Learning Approaches	ICT4SD 2024	01-Jan-25	978-981-97-8537-7	https://doi.org/10.1007/978-981-97-8537-7_7
Dr. K. Suresh Babu	CSE	INTRUSION DETECTION SYSTEM FOR CYBER SECURITY IN SMART AGRICULTURE WITH ABCIS TECHNIQUES	Journal of Theoretical and Applied Information Technology	01-May-24	ISSN: 1992-8645	https://www.jatit.org/volumes/Vol102No10/9Vol102No10.pdf
Dr. R. SateesKumar	CSE	Machine Learning Models for Predictive Marketing Analytics	Intelligent Pharmacy	28 November 2024.	979-8-3503-6469-9	DOI:10.1109/ICAIIS62412.2024.10877468
Dr. R. Satheeskumar	CSE	AI-driven biomarker discovery for early diagnosis and prognosis in oral oncology	Oral Oncology Reports	09-May-25		https://doi.org/10.1016/j.oor.2025.100749
Dr. R. Satheeskumar	CSE	AI - Driven diagnostics and personalized treatment planning in oral oncology: Innovations and future directions	Oral Oncology Reports	24-Dec	2772-9060	https://doi.org/10.1016/j.oor.2024.100704
M.Mounika Naga Bhavani	CSE	Enhancing security: A deep learning approach for automated weapon detection	ICAECT 2024	Jul-25	9781003515470	https://doi.org/10.1201/9781003515470
M. Sampath Kumar	CSE	An Interactive Healthcare Recommendation System Using Big Data Analytics	2024 3rd International Conference for Advancement in Technology (ICONAT)	10-Dec-24	ISBN:979-8-3503-5418-8	https://ieeexplore.ieee.org/document/10774650

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V. Karuna Kumar	CSE	A Scrutiny of Machine Learning Methods for the Detection and Identification of Cyber Intrusion	*2024 International Conference on Advances in Modern Age Technologies for Health and Engineering Science (AMATHE)*	12-Jul-24	979-8-3503-7157-4	https://ieeexplore.ieee.org/document/10582241
V. Karuna Kumar	CSE	Improving Early Detection of Diabetic Retinopathy: A Hybrid Deep Learning Model Focused on Lesion Identification	*2024 First International Conference on Innovations in Communications, Electrical and Computer Engineering (ICICEC)*	30-Dec-24	979-8-3503-7052-4	https://ieeexplore.ieee.org/document/10808807
V. Karuna Kumar	CSE	Deep Learning Solutions for Soybean Leaf Infestation: A VGG19-Based Approach	2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)	09-May-25	ISBN:979-8-3315-2170-7	DOI: 10.1109/IATMSI64286.2025.10985548
V. Karuna Kumar	CSE	Enhanced Multi-Class Classification of Kidney Abnormalities Using VGG16 and Advanced CT Image Analysis Techniques	2024 2nd International Conference on Signal Processing, Communication, Power and Embedded System (SCOPES)	16-May-25	979-8-3315-0645-2	DOI: 10.1109/SCOPES64467.2024.10990409
V.Mahesh Babu	MCA	An efficient method of diabetes prediction using machine learning	Challenges in Information, Communication and Computing Technology. Volume 1 : proceedings of the 2nd International Conference on Challenges in Information, Communication, and Computing Technology (ICCICCT 2024), April 26th & 27th, 2024, Namakkal, Tamil Nadu, Indiagy	Apr-25		https://search.worldcat.org/search?q=bn:9781003559085
Dr. V. Venkata Rao	ECE	DESIGN OF LOW POWER HIGH SPEED CMOS D FLIP-FLOP USING HYBRID LOW POWER TECHNIQUES	Mukt Shabd Journal	Jul-24	2347-3150	https://drive.google.com/file/d/1ZHP23L3ng79U1nX_0YnPalDstdoxt3BL/view?usp=sharing
T. Indira	ECE	DESIGN AN AREA EFFICIENT KOGGE STONE ADDER USING PASS TRANSISTOR LOGIC	Mukt Shabd Journal	Jul-24	2347-3150	https://drive.google.com/file/d/1EnSGcmzA2AVBY7nP-4hvNDd9GxGh8Tf5/view?usp=sharing
Dr. K. Raju	ECE	Iot-Based Leaf Disease Identification And Detection Using Successive Method For Feature Extraction	Tuijin Jishu/Journal of Propulsion Technology	Oct-24	1001-4055	https://propulsiontechjournal.com/index.php/journal/article/view/8115

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J .Brahmaiah Naik. Y.Jaipal Reddy	ECE	An Effective and Safe Method for Digital Image Watermarking That Uses RDWT Algorithms with SVD and Firefly	Tuijin Jishu/Journal of Propulsion Technology	Aug-24	1001-4055	https://www.propulsiontechjournal.com/index.php/journal/article/view/7094/4610
B.Siva NageswaraRao	ECE	IoT Based Smart Bin Design and Implementation for an Effective Waste Management System	Liberte Journal	Nov-24	0024-2020	https://liberteresearch.org/wp-content/uploads/2-LBRJ2092.pdf
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Dr SK EBRAHEEM KHALEELULLLA	ECE	Evaluating the tetinal eye disease in depth using neural networks for early detection and prevention	International Conference on Advancements in Sustainable Energy, Materials & Manufacturing Technology (ICASMMT 2024)	13 Sept. 2024	2349-5162	https://pubs.aip.org/aip/acp/article-abstract/3342/1/030020/3365203/Evaluating-the-tetinal-eye-disease-in-depth-using?redirectedFrom=PDF
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Dr A V NAGESWARA RAO	ECE	A SAFE AND OBSERVATIONAL SMART ROBOT SYSTEM FOR MONITORING AND MANAGING IN REAL TIME USING RASPBERRY PI AND IOT	International Conference on Advancements in Sustainable Energy, Materials & Manufacturing Technology (ICASMMT 2024)	13 Sept. 2024	2349-5162	https://pubs.aip.org/aip/acp/article-abstract/3342/1/060009/3365310/A-safe-and-observational-smart-robot-system-for?redirectedFrom=PDF
Dr. MD Javeed Ahammed	ECE	An Innovative Technique for Low Leakage Power SRAM Cells Using FinFET-Based Self-Controlled Voltage Level Techniques	International Conference on Advancements in Sustainable Energy, Materials & Manufacturing Technology (ICASMMT 2024)	13 Sept. 2024	2349-5162	https://pubs.aip.org/aip/acp/article-abstract/3342/1/060023/3365273/An-innovative-technique-for-low-leakage-power-SRAM?redirectedFrom=PDF
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Dr. Sk. Ebraheem Khaleelulla, Dr. B. Suneetha	ECE	An Assessment of a Single, Detail-Preserved Image Processing Algorithm for De-Hazing due to Airlight Refinement	2nd International Conference on Signal Processing, Communication, Power and Embedded System	Dec.. 2024	979-8-3315-2142-4	https://ieeexplore.ieee.org/abstract/document/10991332
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Dr.P PATTABHI	MBA	Understanding Consumer Behavior in the Retail Sector Using RFM Segment and Machine Learing	European Economic Letters	2024	2323-5233	http://eelet.org.uk
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Dr.G.ANIL KUMAR	MBA	Effects of Macroeconomic Factors on Indian Stock Market Performance: An Empirical Analysis	JIER	2024	ISSN: 1526-4726	http://jier.org
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R.Mohana Ramana	Mathematics	Comparitive Study of Chemically Reacted Nano fluids SWCNT, MWCNT with modelling of Cattaneo-Christov Heat Fluxes	International Journal of Heat and Technology	2024		DOI: https://doi.org/10.18280/ijht.420517
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Applied Physics A
Materials Science & Processing

Exploring the spectroscopic and structural properties of B_2O_3-ZnF_2-CaF_2-Al_2O_3 glass matrices doped with Sm^{3+} ions

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Abstract

In this research, B_2O_3-ZnF_2-CaF_2-Al_2O_3 glasses were first produced using the melt quenching process. Second, by addition of Sm_2O_3, these glasses were doped with Sm^{3+} ions. Third, to explore the effect of these ions on the properties of the doped glasses, spectroscopic techniques such as X-ray diffraction (XRD), Fourier transform infrared (FT-IR) transmission, optical absorption, and luminescence spectroscopy were used. The XRD patterns confirm the amorphous nature of the studied glasses. The FT-IR spectra indicate the presence of numerous borate functional groups. The optical absorption spectra reveal various transitions of Sm^{3+} ions; specifically, $^6P_{3/2}$, $^4M_{15/2}+{}^4I_{11/2}$, $^6F_{9/2}$, $^6F_{7/2}$, $^6F_{5/2}$, $^6F_{3/2}$, $^6H_{15/2}$, and $^6F_{1/2}$. Direct, indirect, and Urbach energy band gaps were computed from the optical absorption spectra, and the nephelauxetic ratio was calculated to evaluate the bonding nature of the doped glasses, as well as the Judd–Ofelt parameters. The luminescence spectra revealed four emission transitions: $^6H_{5/2}$, $^6H_{7/2}$, $^6H_{9/2}$, and $^6H_{11/2}$, with the $^4G_5 \rightarrow {}^6H_{7/2}$ transition (falling within the orange-red zone) having the highest intensity. The radiative transition probability A_{rad}, total radiative transition probability A_T, branching ratio β_r, radiative lifetime τ_{rad}, and CIE color coordinates were determined from the emission spectra. According to this investigation, the studied glasses can be used to generate intense visible orange emission light for optoelectronic devices.

Keywords X-ray diffraction · Optical absorption · Fourier transform infrared transmission · Emission spectra · Nephelauxetic ratio

1 Introduction

The production and utilization of novel glasses doped with rare earth elements has increased in recent years due to their versatile applications in numerous fields, including optical technologies, multicolour displays, infrared (IR) sensors, and biological diagnostics. Glasses using rare earth elements are considered essential photonic materials because of their distinctive features. Trivalent rare earth-doped materials have unique characteristics thanks to the electronic transitions that they exhibit in different spectral regions. Namely, the excitation and emission spectra of 4f transitions are influenced by the local symmetry, environment, and structure of the host glass materials [1, 2]. By varying the quantity of rare earth ions, the local environment of these ions can be modified to enhance the performance of rare earth-doped glasses. Due to these qualities, rare earth-doped materials are crucial in current technological applications, encompassing applications such as computer and optical amplifiers, consumer electronics, healthcare, and advanced telecommunications.

Due to their technical applications, Sm^{3+} are amongst the most appealing rare earth ions, known for their high fluorescence and emission properties, as well as their ability to generate luminescence in the visible and near-IR regions [3, 4]. Sm^{3+}-doped glasses are particularly useful for high-density optical storage, underwater communication, color display systems,

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RESEARCH ARTICLE | OCTOBER 03 2025

Assessment of optimization methods for both conventional and double condensing chamber solar stills

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Solar stills should be utilized to transform saline water into fresh water. Various types and designs of solar stills are employed to achieve the desired results. This paper will be more productive if SS with a separate condensing chamber is used. Energy and energy efficiency are evaluated between the performance of condensing chambers and classic stills. It was demonstrated that a solar still without a separate condensing chamber has an exergy efficiency of 60.8% higher than that of a standard SS.

Topics

Energy efficiency

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RESEARCH ARTICLE | OCTOBER 03 2025

Calculating the tensile strength of EN8 steel by using cryogenic treatment

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In an effort to achieve more economical machining, a tensile strength analysis of cryogenically treated EN8 steel is conducted. The material is heated to a very high temperature and then quenched in oil to cool it down as per the traditional heat treatment procedure. A substance may be subjected to the Cryogenic Treatment, which comprises subjecting it to temperatures as low as -190oC to -273oC while it is confined in a chamber filled with liquid nitrogen. This study compares the effects of standard heat treatment and deep cryogenic treatment (DCT) on tensile strength of EN8 steel. The studies are displayed that extensive cryogenic treatment of EN8 steel greatly improves the material's tensile strength.

Topics

Cryogenics, Machining, Materials properties, Chemical elements

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RESEARCH ARTICLE | OCTOBER 03 2025

Strength of rotar blade frequency of helicopter using ANSYS dynamic and harmonic analysis for noise reduction

Venkannababu Mendi ; Venkata Siva Bathula; D. Ramajogi Naidu; Pisini Raminaidu; Sekhar Chinthamreddy; Venkaiah Mandula

+ Author & Article Information

AIP Conf. Proc. 3325, 020005 (2025)

https://doi.org/10.1063/5.0291837

The main rotor of a helicopter is composed of multiple rotor wings and a control system, which produces lift force to support helicopter's weight and thrust to counteract aerodynamic drag during forward flight. The primary goal of this research is to simulate and assess the rotor blade strength of a helicopter. A rotor blade is a three-dimensional, intricate device. High-end modeling CAD software is utilized to create blade method in CATIA V5 R20. Brief descriptions of Fiber Reinforced Plastic (FRP) materials and benefits of utilizing composite rotor blades as opposed to conventional metallic ones are provided in this project. The metal and composite strength survey of rotor blades is the main topic of this work. Calculate the frequency of a helicopter's specified rotor blades using ANSYS software that includes modal, dynamic, and harmonic analysis.

Topics

Computer software, Signal processing, Composite materials, Harmonic analysis, Fluid drag

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RESEARCH ARTICLE | OCTOBER 03 2025

An assessment of tensile and its impact on characteristics of hybrid composites using woven fabrics composed of basalt, jute and sisal fiber

Penugonda Suresh Babu ✉; Suneel Donthamsetty; B. Rama Krishna; D. Appa Rao; Kiran Chand Kopila; Kandru John Babu

+ Author & Article Information

AIP Conf. Proc. 3325, 040029 (2025)

https://doi.org/10.1063/5.0291838

In the area of material production, green technology has become vital due to its sustainability and environmental concerns. The purpose of this work is to propose a unique food tray table material that is less harmful to the environment. This substance is a composite hybrid of jute (J), sisal (S), and basalt (B). This study, which reports on an experimental examination, focuses on the mechanics of hybrid composites, namely their low-velocity impact and tensile properties. Through the analysis of experimental data and an investigation of hybrid composites' dynamic behaviour under low velocity impactenergy, this study seeks to characterize damage from impact and tensile tests. Tensile testing is being done on first-stage hybrid composites for five layers in four different configurations (B-S-JS-B, B-S-S-S-B, B-J-J-J-B, and B-J-S-J-B). Using a circular steel impactor, the two best configurations out of 4 are put through a low-velocity impact at numerous energy levels ranging from 10J to 40J in second stage. The results displays that specimens with B-J-J-J-B and B-J-S-J-B configurations in hybrid composites had 90% greater mechanical properties than the specimens with the B-S-J-S-B and B-S-S-S-B configurations. Regarding the recently created material, B-J-J-J-B is displaying ideal configuration in impact test. Ultimately, it can be said that these hybrid composites have the potential to be further developed into a novel research material.

Topics

Impact testing, Basalt, Tensile properties, Ecological

RESEARCH ARTICLE | OCTOBER 03 2025

ZnO, AL_2O_3, and SiC particles reinforced electroless Ni-P duplex coatings comparative microhardness analysis

Venkata Siva Bathula ✉; Venkannababu Mendi; D. Appa Rao; Rapaka Jagadeesh; Venkaiah Mandula; Sekhar Chinthamreddy

+ Author & Article information

AIP Conf. Proc. 3325, 030020 (2025)

https://doi.org/10.1063/5.0291839

Surface coating techniques can enhance a component's functional performance. To improve component performance, most sectors must employ different coating techniques. So as toimprovesurface hardness of mild steel, duplex Ni-P-Al2O3/Ni-P-SiC and Ni-P-ZnO/ Ni-P-SiC coatings were investigated. This work uses a twin electroless bath to generate multi-layer coatings. The duplex coating's microhardness was measured utilizing Vickers microhardness tester. In order to raise the deposit's microhardness, the previously stated coatings underwent a heat treatment that involved heating them to 400°C. The two coatings were compared to see which was better at reaching a desired level of surface hardness. The results show that Ni-P-SiC outer layer duplex coating offers good micro hardness. The deposit's microhardness has risen during the heat treatment process as result of Phase transition from unstructured to structured hard Ni3P takes place.

Topics

Phase transitions, Alloys, Hardness, Materials treatment

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RESEARCH ARTICLE | OCTOBER 03 2025

Exploration on the development and fabrication of thermoelectric module-based quick water freezers

P. Sravani ✉; D. Jagadish; P. Raminaidu; R. Jagadeesh; D. Raghavendra; T. Ashok Kumar

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AIP Conf. Proc. 3325, 020003 (2025)

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Many methods that may be employed to create a refrigeration effect using a thermoelectric module— which we use to create a cooling effect—have become possible as a result of ongoing scientific and technological advancements. The primary goal of its portable freezer is to create a chilling effect that will help preserve insulin in difficult situations. Because it is based on Peltier effect, a thermoelectric module is utilized in place of compressor to make it portable. By using the Peltier effect, effectiveness is preserved while simultaneously creating a hot and a cooling side. A thermoelectric cooler (TEC) is constructed from easily sourced parts and functions similarly to a solid heat pump. Because of the differences in the system's mechanics, the thermoelectric refrigerator is noise- and vibration-free, portable, compact, and does not produce CFCs. It also does not contain any liquids or gasses. It is a prototype, and the semiconductor materials allow for immediate heating or cooling using the Peltier effect. Its benefit is that it requires no maintenance because it is devoid of moving parts.

Topics

Heat pumps, Thermoelectric effects, Refrigeration effect, Semiconductor materials

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Sustainable Alternative Materials in Light Weight Concrete

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Abstract: Lightweight concrete has a great role to play in material saving, cost saving and hence environmental sustainability. This paper presents a scientific investigation on making Lightweight concrete by mixing locally available aeration agents with ordinary Portland cement concrete. The basic objective of this work is to identify the best additive among a few locally available aeration agents by replacing various aeration agents such as aluminium powder, bleaching powder and H_2O_2 either individually or in combination by weight of cement in M30 grade concrete. It was observed from the density and compressive strength test results of the mixes that the among bleaching powder, hydrogen peroxide, and aluminum powder (flakes), the reduction in density is more for aluminum flakes. Further, both the compressive strength and density of concrete are observed to be the lowest of all the trials for the mix with 20% aluminium flakes and 0.4 w/c ratios. However, when the aluminium flakes are taken as 5% and the w/c ratio is taken as 0.46, the compressive strength is observed to be the highest of all the other trails.

Keywords. Lightweight Concrete, Bleaching Powder, Hydrogen Peroxide, Aluminium Flakes, Compressive Strength, Density.

INTRODUCTION

The applications of lightweight concrete in structural and pavement applications are well established. No fines concrete, lightweight aggregate concrete and Aerated concrete are the most common lightweight concretes researched and adopted by the construction industry in the recent past. Aerated concrete can be made by mixing aeration agents. This paper presents an experimental investigation on making Lightweight concrete by mixing locally available aeration agents with ordinary Portland cement concrete (OPC-Traditional cement). The basic aim is to identify the best additive among a few locally available aeration agents. Early 19th century, no-fines cement concrete was investigated for a range of uses such as preassembled or prefabricated panels, load-bearing walls and pavement. Particularly, after World War II, in Europe, the usage of this concrete rapidly developed. Its use grew throughout Australia, Venezuela, Russia, the Middle East and West Africa as it used less quantity of cement. Despite not facing the same material shortages as Europe during World War II, the United States did not widely adopt no-fines cement concrete until the 1970s. Its primary appeal was its permeability, rather than its cost-effectiveness, though the latter was a benefit. However, as land development expanded in the US, increased runoff led to more frequent flooding. This caused a severe impact on the ecology, causing erosion and lowering water quality. This form of concrete began in Florida, New Mexico and Utah, but has since spread throughout the US there has been extensive study on ecologically sustainable growth. As a consequence, no-fines concrete has displaced ordinary concrete and asphalt pavements. This concrete significantly decreases environmental deterioration and the negative impacts of urban development. It is a successful technique for treating and mitigating detrimental environmental effects. Dirt and debris sediments, automobile brake linings heavy metals and hydrocarbons (from oil that spills from vehicles onto the pavement and from binder/sealer used in asphalt pavements) are the three major pollutants in urban runoff. These concrete surfaces not only keep water sheds and habitats clean, but they also keep runoff at bay. It is critical to have a permeable subgrade in preceding concrete pavements and parking shelters to guarantee water penetration into the soil. Water percolation in a prior concrete pavement is tolerable at 2.5 mm per hour. The best sub-base materials are crushed rock fills or well-washed riverbed rocks. The sub-base must be roller or plate compacted to produce a homogeneous working surface and to rectify any imperfections in the subgrade. Figure 1 depicts a usual cross-section of concrete pavement. Light Weight Concrete (LWC) which are also called with other names such as aerated concrete or foam concrete. These types of concretes are preferred to decrease the dead weight of the structure, thermal insulating material, acoustic insulation, fire resistance, levelling course, etc., on

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Behavior of Self-Compacting Concrete at Various Levels of Replacement to Fine Aggregate by Pond Ash and Quarry Dust

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***Abstract*— (SCC) Self-compacting concrete has become increasingly popular in construction due to its ease of placement and flow ability. However, challenges in concrete production include the high demand and cost of cement, environmental concerns, and the rapid depletion of natural river sand from excessive extraction. To address these issues, alternative materials like pond ash from thermal power plants and quarry dust from stone quarries are being explored as replacements for natural fine aggregates in SCC. This dissertation investigates the use of pond ash and quarry dust as partial substitutes for natural fine aggregate in SCC. The study involved replacing 0% to 30% of natural fine aggregate with pond ash and quarry dust at intervals of 10%, while maintaining a constant cement content 500 kg/m³,water content 200 liters. primary goal was to determine the optimal percentage of fine aggregate replacement to achieve the desired flow characteristics in SCC. Two SCC mixes, PQSCC20 and PQSCC30, were prepared and compared with a normal self-compacting concrete (NSCC00). Various fresh properties were evaluated using tests such as T-Slump, T500mm-slump, L-Box, U-Box, V-funnel, and V5min-Funnel, following EFNARC guidelines. Hardened properties were assessed through compressive strength and split tensile strength tests, and water absorption was measured by weight. The study found that replacing 20% of fine aggregate with pond ash and quarry dust (PQSCC20) was optimal. The fresh properties of all mixes met EFNARC specifications. For PQSCC20, the compressive strength was 35.85 N/mm², the split tensile strength was 3.09 N/mm² at 28 days, and the water absorption was within the acceptable limit (less than 0.5).**

Keywords*—Self Compacting Concrete (SCC), Pond Ash, Thermal Power Plants, Quarry Dust, Normal Self-Compacting Concrete (NSCC00), Compressive Strength, Split Tensile Strength.

I. INTRODUCTION

In modern construction and infrastructure needs, concrete is commonly used construction materials. Due to its ability to be molded into any structural form or shape, it is used as a construction material. Normal concrete density is between 2200 and 2600 kg/m3 and is critical on self-weight structures in conditions such as weak soils and tall structures. The major role of concrete density can be minimized by using lightweight concrete. Lightweight concrete has density that range from 300 -1800 kg/m3, which is used worldwide in many construction projects where heavy construction is required and the soil is weak. LWC can be produced by using lightweight materials like Lightweight Expanded Clay Aggregate, Pumice stone, expanded shale, Perlite etc. Structural lightweight aggregate can be produced naturally or from environmental by products, use of these aggregates can reduce the density of concrete, the self-weight of the structure and it helps to construct larger precast unit.

Vibration and compaction are not required when placing SCC. Originally developed in Japan in the 1980s, SCC became popular in the 2000s and is used in ready-mixed concrete (RMC) and prefabricated products. SCC refers for "rapid rate of concrete placement," which shortens construction time and easy the flow of congested reinforcement. SCC is stronger because to its high level of homogeneity and less concrete voids. Early strength is provided for early demoulding and a low water-to-cement ratio. SCC works well in places with limited availability to skilled labor, congested areas, low compaction and curing, and structures that need to be very strong.

To achieve passing, filling ability in SCC, a super plasticizer is used. Strength and durability properties of SCC are improves with SCMs (Supplementary Cementing Material) such as GGBS, silica fume and fly ash. Standard mix design procedures for SCC are required as self-

Design of Reinforced Concrete Beams Shear Strength at Blast Loading

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Abstract

The various types of dynamic loads that an engineer might face while working on a design. The blast load, or the pressure an explosion pressure on buildings, is one of these loads. This technique has been widely applied to both military and civilian construction tasks. Due to the reason that prestressing has a higher crack resistance than non-prestressed components are increases structural stiffness and load carrying capability, structural elements made of prestressed Reinforced concrete (RC), such columns and beams, usually perform better than non-prestressed RC beams. It typically leads to light constructions as a result. In order to predict the dynamic response of blast-loaded reinforced concrete beams, this research investigated if the finite element method could be used. Therefore, this model shows better results in terms of displacement, crack size and shear damage.

Keyword: Reinforced Concrete (RC), Beams, Dynamic Loads, Blast Load.

1. Introduction

Due to recent accidental explosions and an increase in terrorist attacks, engineering groups and government organizations must prioritize the blast protection of structures [1]. When load-bearing beams and columns suddenly fail, consistent collapse structures subjected to blast loads often follow the most common failure pattern. The building's ability to survive a blast depends critically on the dependability of these vulnerable beams [2].

A single span supported at the end of a beam without any constraints at the support is referred to as a simple concrete beam. A simple beam may also be referred to as a simply supported beam [3].

A beam that is supported by more than two sources is called a continuous beam. That might be made up of a single continuous beam with alternating wall or column supports that covers the entire construction, for large spans between columns or walls, a single beam with intermediate supports of smaller beams may be provided [4].

The horizontal structural components known as beams, are used to support lateral loads. When they are slanted or inclined, they are referred to as raker beams. In a reinforced concrete building, floor beams are usually designed to support weights from the floor slab, their own

weight, the weight of finishes, partitions/cladding, any other loads [5]. In order to support the applied load without failing or deflecting, the proper beam size and reinforcing area must be determined throughout the beam design process. Many factors are taken into account when the design of beams is carried out. They will look at all of the major factors and principles used in

Experimental Study on Partial Replacement of Cement with Marble Powder and Fine Aggregate with Quarry Dust

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Abstract

GPC is a high-performance alternative and/or supplementary inorganic polymer for both in composite form. It showed the high strength, corrosion, acid resistance, heat resistance, and reduced curing times. The production of GPC is done through the alkali activation of industrial alumino-silicate byproducts, providing 22% to 27% lower CO2 emissions compared to conventional concrete. To achieve this, in this study concrete mixes were developed by partial replacing of cement using red mud an industrial waste produce from bauxite industries along with Ground Granulated Blast Furnace Slag (GGBS). Different trial mixes were prepared by mixing different proportions of red mud and GGBS using a alkaline solution This study investigates and compares characteristics (compressive strength, flexural strength etc.) of these mixes with normal concrete.

Keywords: Geopolymer Concrete (GPC), Concrete, Granulated Blast Furnace Slag (GGBS), Compressive Strength, Flexural Strength.

1. Introduction

The geopolymer is name. This was first defined as a material that could react with just about anything, in the system of inorganic particles by Davidovits 1978. Most geopolymer binders are activated by heat, containing either a meta kaolinite, or an average raw material of waste materials, like fly ash or aggregate Voids contribution for Al-Si generation templates. Another possible solution to the problem might leverage a traditional polymerization process for making glass or polymer chains, this time to wrap and encase these very shells. Teacher B. Vijaya Rangan from Curtin University mentions polymerization polymerization process that is a very fast chemical reaction at alkaline condition on silicon-aluminium minerals which could form three-dimensional polymeric chain and ring structure.

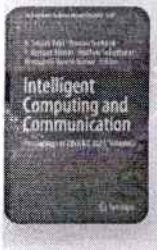
The nebulous to translucent response items coming about because of the amalgamation of soluble base alumino-silicates and high basic arrangement is known as "Geo-Polymer".

It learns data till October 2023 in the actual life scenario, at the time of rock mining, millions of tons of (MDP) are produced It is acknowledged that marble dust is a substitute material for curing and enhancing the characteristics of concrete. Use it becomes quantitative these days Marble is a metamorphic rock. We are metamorphosing an unadulterated limestone. Its innocence comes from its colour and visual presentation. Similarly, if marble is white then only limestone comprises calcite (100% CaCO3). It's a most needed material for building or

An Assessment on the Significance and Advancement of Cloud Security Through the Usage of Privacy-Related Data Sharing

Conference paper | First Online: 29 March 2025

pp 25–33 | Cite this conference paper



Intelligent Computing and Communication

(ICICC 2024)

Jhansi Vazram Bolla, K. Sireesha, D. Priyanka & P. Anjaneyulu

Part of the book series: Lecture Notes in Networks and Systems ((LNNS,volume 1241))

Included in the following conference series:
International Conference on Intelligent Computing and Communication

Abstract

In addition to providing helpful support in the form of data sharing, CC also provides funding. Information substance security also results from the transfer of the data to specific cloud workers. To improve access control over collective data and safeguard important and sensitive information, a number of procedures are employed. In this case, using ciphertext-policy attribute-based encryption (CP-ABE) approaches could be very advantageous and secure. While the traditional CP-

Prediction of Liver Disease Using Machine Learning Algorithms

Conference paper | First Online: 18 January 2024

pp 243–254 | Cite this conference paper

Data Science and Applications

(ICDSA 2023)

Sireesha Moturi, Jhansi Vazram Bolla, M. Anusha, M. Mounika Naga Bhavani, Srikanth Vemuru, S. N. Tirumala Rao & Sneha Ananya Mallipeddi

Part of the book series: Lecture Notes in Networks and Systems ((LNNS,volume 820))

Included in the following conference series:
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Abstract

Most important internal organ of human body is liver, and its primary functions are to break down food, to maintain energy minerals and vitamins and to get rid of waste that is generated by our organs. Damage of liver can cause numerous death dealing disorders like liver cancer, so we must treat the patients to lower the probability of those fatal diseases in early stage. Curing of liver disease is exorbitant and advanced, and various analyses have been carried out by making use of

Machine Learning Models for Chronic Renal Disease Prediction

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Data Science and Applications

(ICDSA 2023)

Sai Kumar Mamidala, Sireesha Moturi ✉, S. N. Tirumala Rao, Jhansi Vazram Bolla & K. V. Narasimha Reddy

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Abstract

Chronic renal disease (CRD) has grown into a prominent concern. A person suffering from chronic renal disease does not have enough kidney functionality, which might be fatal as a result of kidney malfunction. Machine learning techniques are effective in predicting CRD. The methodology presented in this study for predicting CRD status determined on clinical information involves data preparation, a missing value management strategy with the use of collaborative filtering, as well as

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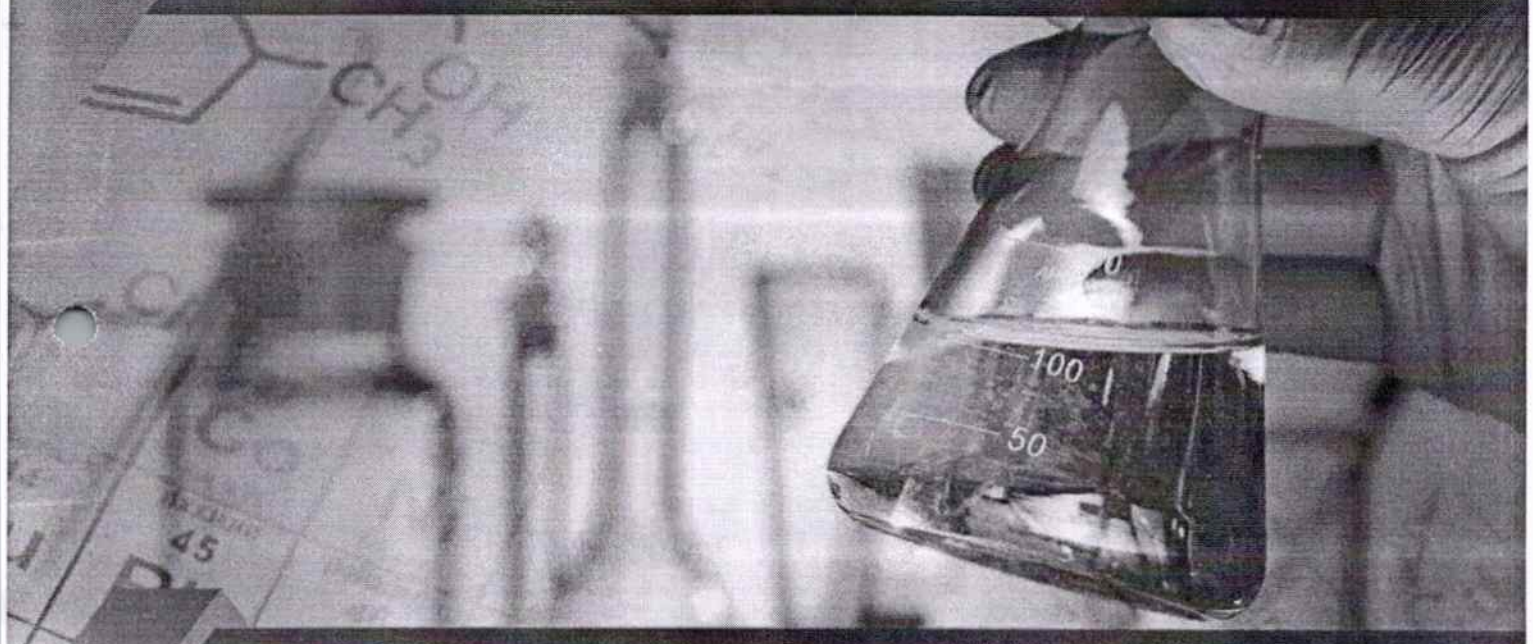

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Beyond Deep Features: Fusing Deep Learning with Local Textures for Enhanc Plant Disease Classification

Publisher: IEEE Cite This

Mothe Suneetha ; Tanniru Harshitha ; Yadala Sandhya ; Narra Divya ; S.N.Tirumala Rao ; Dodda Venkatareddy **All Authors**

Abstract:
Precision plant disease type plays a vital role in powerful crop control, ailment control, and safeguarding agricu productiveness and food security. Deep getting-to-know fashions, mainly deep convolutional neural networks (have established themselves as surprisingly effective in diagnosing plant illnesses from huge image datasets. However, they now and again struggle with differentiating sicknesses that appear visually similar due to confin nearby texture elements. This technique combines DCNNs for high-level function extraction with neighborhooc descriptors like Local Binary Patterns (LBP) to predict the plant leaf diseases and to improve ailment category accuracy. Even in hard conditions, this framework considerably increases sensitivity and specificity by means combining worldwide and neighborhood information. Experiments on benchmark datasets show that this mode outperforms traditional techniques with an accuracy of 96%. This answer gives a realistic, reliable device for re international agriculture, permitting farmers to make properly knowledgeable choices for preserving crop outpu health

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Conference Paper

DeepLearning-Based Tomato Leaf Disease Identification: Enhancing Classification with AlexNet

March 2025
DOI:10.1109/IATMSI64286.2025.10984969
Conference: 2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)

Authors:

s. N. Tirumala Rao · **Teja Charan Dulla** · **Vamsi Krishna Kolla** · **Guna Schekar Kurakula**

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Citations (0) References (17)

An optimized capsule neural networks for tomato leaf disease classification

Article Full-text available

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Lobna Abou El-Magd · Mahmoud Y. Shams · Hanaa Salem Marie · Aboul Ella Hassanien

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Multi-Class Classification of Plant Leaf Diseases Using Feature Fusion of Deep Convolutional Neural Network and Local Binary Pattern

Conference Paper

Fake Profile Detection Using Machine Learning

March 2025

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4

Journal of Environmental Protection and Ecology 26, No 3, 1094–1104 (2025)

Computer science

LOSSY AND LOSSLESS SOURCE CODING INNOVATIONS FOR NEXT-GENERATION MILLIMETER-WAVE AND TERAHERTZ COMMUNICATIONS

S. V. N. SREENIVASU[a]*, N. CHITRA KIRAN[b], FLORY FRANCIS[c], R. V. S. LALITHA[d], DAXA VEKARIYA[e], SUJATA ARYA[f], A. S. MAHESH KUMAR[g], JIM MATHEW PHILIP[h]

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Abstract. In the growing need of large data rates in next-generation communication systems in mmWave and Terahertz (THz) bands, makes it challenging for strike a balance among data compression, data transmission, and computational complexity. The existing source coding methods models fail to handle the diverse data types in dynamic channel conditions in high-frequency communication systems. To addresses this issue, this study presents a hybrid source coding method that integrates the lossy and lossless compression method to optimise the data transmission in mmWave and THz communication systems. An intelligent pre-coding module is integrated with the proposed model for real-time data type and channel condition evaluation process. The adaptive hybrid coding technique is employed for dynamically switching the lossy and lossless compression modes. The sophisticated quantisation and entropy-based techniques is utilised for lossy compression, while improving predictive coding employed for lossless compression and ensuring a high-frequency data transmission in dynamic environments. Additionally, QoS management and intelligent resource allocation are integrated into the system to maximise processing, power, and bandwidth. At last, the intelligent resource

* For correspondence.

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Article PDF Available

Integrating Homomorphic Encryption with Blockchain Technology for Machine Learning Applications

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Raghunath B

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Abstract

Leveraging cutting-edge technology like blockchain and machine intelligence, smart healthcare systems have emerged as a potential strategy for enhancing healthcare services. In order to secure health data, this study offers a unique design and analysis of a smart healthcare system that applies blockchain technique and the paillier homomorphic encryption algorithm in addition to a machine learning algorithm to detect cardiological disease. The suggested method seeks to solve the problems with predictive analytics and safe health data exchange in the medical field. Sensitive information is encrypted during transmission and storage using the Paillier Homomorphic Encryption technique, guaranteeing its confidentiality. By providing traceability and accountability in data access and sharing, blockchain technology is used to construct a safe and transparent record of health transactions. In addition, a machine learning algorithm is used to forecast cardiac illness based on the encrypted data, giving medical practitioners insightful information to help them make judgments. The integration of these technologies and their advantages in improving healthcare services are highlighted in the discussion of the proposed scheme's constructional and operational specification section. Simulation experiments are used to assess the suggested method's efficiency and reflect its efficacy in terms of data security, detection accurateness, and computing proficiency. Comparing the integrated approach to conventional approaches, the results demonstrate a considerable improvement in prediction accuracy and security of health data. To sum up, the suggested smart healthcare system provides a thorough approach to guaranteeing the security of patient data and enhancing predictive analytics in the medical field. Machine learning, blockchain technology, and Paillier homomorphic encryption are all integrated into it, which shows promise for improving healthcare services and developing the field of smart healthcare systems.

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Chapter

Experimentation and Testing of IoT Based System for Enhancement of Chemical Laboratory Safety for Prevention of Accidents

By S. V. N. Sreenivasu (/search?contributorName=S. V. N. Sreenivasu&contributorRole=author&redirectFromPDP=true&context=ubx), Ahmad Lalahmad Shaikh (/search?contributorName=Ahmad Lalahmad Shaikh&contributorRole=author&redirectFromPDP=true&context=ubx), Bipin Kumar Srivastava (/search?contributorName=Bipin Kumar Srivastava&contributorRole=author&redirectFromPDP=true&context=ubx), Bhaskar Nautiyal (/search?contributorName=Bhaskar Nautiyal&contributorRole=author&redirectFromPDP=true&context=ubx), C. Hazarathaiah Yadav (/search?contributorName=C. Hazarathaiah Yadav&contributorRole=author&redirectFromPDP=true&context=ubx)

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Edition	1st Edition
First Published	2025
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Pages	19

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ABSTRACT

< Previous Chapter (chapters/edit/10.1201/9781003610717-16/localization-synchronization-techniques-enhanced-rfid-rf-sensing-applications-monika-bhatnagar-shafiqul-abidin-shaunak-pal-chetan-pandey-anantha-rao-gottimukkala?context=ubx)
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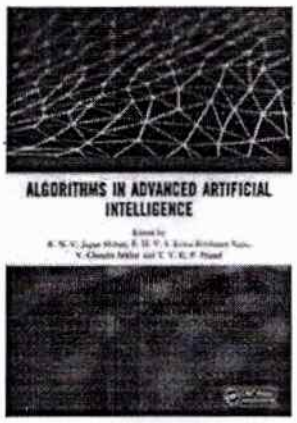
Chapter



Next-Gen Attendance System

By S. V. N. Sreenivasu (/search?contributorName=S. V. N. Sreenivasu&contributorRole=author&redirectFromPDP=true&context=ubx), Ch. Rajani (/search?contributorName=Ch. Rajani&contributorRole=author&redirectFromPDP=true&context=ubx), Bogyam Indu (/search?contributorName=Bogyam Indu&contributorRole=author&redirectFromPDP=true&context=ubx), Thumu Tejawini (/search?contributorName=Thumu Tejawini&contributorRole=author&redirectFromPDP=true&context=ubx), Kongara Abhinaya (/search?contributorName=Kongara Abhinaya&contributorRole=author&redirectFromPDP=true&context=ubx), Sireesha Moturi (/search?contributorName=Sireesha Moturi&contributorRole=author&redirectFromPDP=true&context=ubx)

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Edition	1st Edition
First Published	2025
Imprint	CRC Press
Pages	6
eBook ISBN	9781003641537

Automated Chest X-Ray Diagnosis with Deep Ensemble Models: A Focus on COVID-19 and Pneumonia Detection

Publisher: IEEE Cite This PDF

S V N Sreenivasu ; Shaik Hafija ; Kanneganti Navya ; Gorantla Gayathri ; Sunkireddy Madhavi ; Marella Venkat Rao **All Authors**

Abstract:
This research involved a detailed study introducing a combo model that would be used for both diagnosing Covid-19 and pneumonia using chest X-ray images. In tests, known for being time-consuming, costly, and sometimes inaccurate, are addressed by this method (RT-PCR). It is commenced by the preprocessing part where images are modified to input shape as well as some data augmentation techniques such as zoom, rotation, and flipping to provide the dataset enough enhancement for the best training result. We use transfer learning to extract deep features using pre-trained VGG16, DenseNet201 and Efficient NetB0 models. The features extracted are then used as input to the fully connected layers and ensemble classifiers, where they classify conditions by probability scores. In their evaluation, they included a chest X-rays dataset where the proposed approach managed to get an impressive 98.5% accuracy rate. And it showed good precision, recall and F1 score with 95%,96% and 95%. The current method is the best time, recall, F1-score, and overall accuracy of the existing ones. In short, this deep ensemble approach is pretty good for diagnosing Covid-19 and pneumonia and is reflected in the hospital treatment of maestros who are cautious in the treatment that they do, and care what is best for their patients.

Published in: 2024 2nd International Conference on Signal Processing, Communication, Power and Embedded System (SCOPES)

Date of Conference: 19-21 December 2024

DOI: 10.1109/SCOPES64467.2024.10991921

Date Added to IEEE *Xplore*: 16 May 2025

Publisher: IEEE

ISBN Information:

Conference Location: Paralakhemundi Campus, Centurion University of Technology and Management, Odisha., India

Rainfall Prediction Using Machine Learning

Publisher: IEEE Cite This PDF

S.V.N. Sreenivasu ; Shaik. Rafi ; V.V.A.S. Lakshmi ; S. Sivanageswara Rao ; Ch. Rajani **All Authors**

1
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Abstract:
The title is "Rainfall Prediction Using Machine Learning". The initiative's dataset is written in Python and stored in Microsoft Excel. A wide range of machine learning algorithms are used to discover which strategy generates the best accurate predictions. In many sections of the country, rainfall forecasting is critical for avoiding major natural disasters. This forecast was created using a variety of machine learning approaches, including catboost, xgboost, decision tree, random forest, logistic regression, neural network, and light gbm. It incorporates several components. The Weather Dataset was utilized. The primary goal of the research is to evaluate a variety of algorithms and determine which one performs best. Farmers may greatly profit from growing the appropriate crops based on the amount of water they require.

Published in: 2024 2nd International Conference on Recent Trends in Microelectronics, Automation, Computing and Communications Systems (ICMACC)

Date of Conference: 19-21 December 2024

DOI: 10.1109/ICMACC62921.2024.10894486

Date Added to IEEE *Xplore*: 26 February 2025

Publisher: IEEE

ISBN Information:

Conference Location: Hyderabad, India

Authors

Figures

References

Keywords

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Harnessing RNN for Enhanced Hate Speech Detection in Social Media

Publisher: IEEE Cite This PDF

CH Rajani ; Thodeti Srinadh ; Kota Varun Chand ; Bathula Anil Kumar ; S.V.N. Sreenivasu ; Dodda Venkatareddy **All Authors**

Abstract:
Social media offers a platform for both conversation and hate speech, making effective detection mechanisms necessary. This paper proposes a deep learning framework using RNN for hate speech detection on Twitter, Ir and Facebook. Key findings show that the RNN-based model outperforms LSTM and GRU models, achieving accuracies of 96.75% on Twitter, 95.3% on Instagram, and 98.20% on Facebook. These results demonstrate t RNNs better capture contextual relationships within text compared to traditional methods, while also emphasiz need for specialized techniques in detecting hate speech across platforms. The pro- posed model holds signifi potential for enhancing online safety through efficient hate speech recognition. The analysis confirms RNNs' s accuracy for platform-specific hate speech detection, offering a powerful tool for improving detection strategies online safety.

Published in: 2024 International Conference on Integrated Intelligence and Communication Systems (ICIICS)

Date of Conference: 22-23 November 2024

DOI: 10.1109/ICIICS63763.2024.10859351

Date Added to IEEE *Xplore*: 05 February 2025

Publisher: IEEE

ISBN Information:

Conference Location: Kalaburagi, India

Hand Gesture Recognition: Enhancing Accuracy and Precision with Deep Learning

Publisher: IEEE Cite This PDF

T. G. Ramnadh Babu ; Dodda Venkata Reddy ; S.V.N. Sreenivasu ; K. Srinivasa Kalyan Ram ; Venkata Aravind Tunuguntla ; Shaik Hazare Khaja Mohiddin

Abstract:

Accurate, real-time recognition of hand gestures in dynamic environments remains challenging in human-comp interaction. This paper presents a hybrid deep learning model combining Convolutional Neural Networks (CNN Recurrent Neural Networks (RNN) using Long Short-Term Memory (LSTM) layers to capture both spatial and t information for dynamic hand gesture recognition. Trained on a dataset of six gestures-scroll-left, scroll-right, s scroll-down, zoom-in, and zoom-out-the model achieves an accuracy of 94.66%, with an F1 score of 0.94 and ROC of 0.95, indicating significant improvement over traditional models and practical viability in real-world app Key topics include data preprocessing, model architecture, hardware and software configurations, and perform comparisons with benchmarks. The paper concludes with discussions on limitations and future research direct enhance the model's adaptability and efficiency.

Published in: 2024 International Conference on Integrated Intelligence and Communication Systems (ICIICS)

Date of Conference: 22-23 November 2024

DOI: 10.1109/ICIICS63763.2024.10859441

Date Added to IEEE *Xplore*: 05 February 2025

Publisher: IEEE

ISBN Information:

Conference Location: Kalaburagi, India

ResNet-CNN Model for Plant Disease Classification for E-Agriculture Applicati

Publisher: IEEE Cite This PDF

Arava Vamsi Kumar ; S. V. N. Sreenivasu ; Kandi Venkata Narasimha Reddy All Authors

Abstract:
The advancement of an economy's innovation capacity is closely tied to the progress in agriculture. Effective p disease management is crucial for optimizing crop yields and ensuring agricultural sustainability. This project f on developing a Plant Disease Detection and Classification Network (PDDC-Net) by integrating deep learning The preprocessing stage standardized the dataset images by eliminating various types of interference. The PD employs a Residual Network (ResNet)-Convolution Neural Network (CNN), featuring residual networks, to enh feature extraction and classification accuracy. The PDDC-Net model demonstrated exceptional performance ir detecting and classifying plant leaf diseases. Specifically, it achieved an accuracy rate of 99.84% across variou diseased leaves, including those from potato, tomato, and pepper plants. Further, the suitable pesticide also su for the recognised disease. The proposed PDDC-Net effectively addresses the challenge of plant disease iden with high accuracy, underscoring its potential as a robust tool for agricultural disease management and innova

Published in: 2024 International Conference on Intelligent Algorithms for Computational Intelligence Systems

Date of Conference: 23-24 August 2024

DOI: 10.1109/IACIS61494.2024.10722020

Date Added to IEEE *Xplore*: 24 October 2024

Publisher: IEEE

ISBN Information:

Conference Location: Hassan, India

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13

Algorithmic Insights into Predicting Hypertension Using Health Data in Cloud-Based Environments

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Keywords: Hypertension Prediction, Cloud-Based Healthcare, Advanced Algorithms, Neural Network, Predictive Analytics

ABSTRACT

This exploration examines the use of cutting-edge calculations for anticipating hypertension inside cloud-based health conditions. Utilizing assorted health information sources, including electronic health records and wearables, we investigated the prescient abilities of four key calculations: Strategic Relapse, Random Forest, Backing Vector Machine (SVM), and Neural Network (Multi-facet Perceptron). Our exploratory arrangement included thorough information preprocessing, highlight extraction, and model preparation on an extensive dataset. The Neural Network arose as the best calculation, accomplishing an exactness of 90%, accuracy of 92%, review of 88%, F1 score of 90%, and an AUC-ROC of 0.94. Random Forest and SVM likewise exhibited hearty execution with a precision of 88% and 87%, individually. Calculated Relapse, however less difficult, displayed cutthroat dependability with a precision of 85%. Correlations with related work highlighted the adaptability of the calculations, reaching out past unambiguous medical services spaces. This exploration adds to the more extensive talk on prescient medical services examination, stressing the reconciliation of cutting-edge calculations in cloud-based conditions. Our findings set the stage for subsequent research, which may include the continuous observation of IoT devices and the improvement of profound learning designs, all while recognizing specific constraints like the representativeness of the dataset and the model's interpretability.

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Stress Detection Using Machine Learning and NLP Over Social Interactions

Publisher: IEEE Cite This PDF

S.V.N Sreenivasu ; Ch. Rajani ; Birlangi Usha Rani ; Arangi Dasaradha All Authors

Abstract:
In our modern society, the prevalence of stress-related psychological disorders has reached alarming levels, le devastating consequences such as suicides and crimes. Recognizing the urgent need for early intervention of related psychological disorders in this paper we explores a novel approach leveraging social media data, Natu Language Processing (NLP), and machine learning algorithms to detect and classify stress levels in individual analyzing the messages shared on social media platforms, we aim to proactively identify signs of psychologica and provide timely support and intervention. Through this innovative application of technology, we aspire to co to the prevention of suicides, reduction of crime rates, and enhancement of overall mental well-being in our communities. In this paper we found best accuracy for random forest model.

Published in: 2024 Second International Conference on Advances in Information Technology (ICAIT)

Date of Conference: 24-27 July 2024

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Date Added to IEEE *Xplore*: 04 October 2024

Publisher: IEEE

ISBN Information:

Conference Location: Chikkamagaluru, Karnatak

Authors
Figures
References
Keywords
Metrics

Automatic Attendance Management System Using CNN

Publisher: IEEE Cite This PDF

S.V.N Sreenivasu ; Ch. Rajani ; Birlangi Usha Rani ; Arangi Dasaradha ; Shaik Rafi **All Authors**

Abstract:
Facial recognition technology plays a crucial role in various applications, from enhancing security at banks and organizations to streamlining attendance tracking in public gatherings and educational institutions. Traditional methods of attendance marking, such as signatures, names, and biometrics, can be time-consuming and error-prone. To address these challenges, a smart attendance system is proposed, leveraging Deep Learning, Convolutional Neural Networks (CNN), and the OpenCV library in Python for efficient face detection and recognition. The system utilizes advanced algorithms, including Eigen faces and fisher faces, to recognize faces accurately. While deep learning models excel with large datasets, they may not perform optimally with few samples. By comparing input faces with images in the dataset, the system automatically updates recognized names and timestamps into a CSV file, which is then sent to the respective organization's head. Additionally, the system allows users to upload a single photo or a group photo, and it returns matched photos as output using a CNN. This feature enhances the system's flexibility and usability, providing users with a convenient way.

Published in: 2024 4th International Conference on Artificial Intelligence and Signal Processing (AISP)

Date of Conference: 26-28 October 2024

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ISBN Information:

Conference Location: VIJAYAWADA, India

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16

Conference Paper

Boosting Network Intrusion Detection with Two-Level Ensemble Learning and Knowledge Distillation Approaches

December 2024

DOI:10.1109/SCOPES64467.2024.10990972

Conference: 2024 2nd International Conference on Signal Processing, Communication, Power and Embedded System (SCOPES)

Authors:

S.V.N. Sreenivasu · **Macharla Bala Rangarao** · **Bollavaram Venkata Srinivasulu** · **Boddupalli Venkata Siva Rama Krishna**

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An Improved and More Effective FSPC-Based Cloud Consumer Legality Process for Protected Data

| Conference paper | First Online: 01 February 2025

| pp 413–424 | Cite this conference paper

Computing, Communication and Learning

(CoCoLe 2024)

D. Priyanka, P. Anjaneyulu, K. Lakshmi Nadh & S. K. Khaja Mohiddin Basha

Part of the book series: Communications in Computer and Information Science ((CCIS,volume 2317))

Included in the following conference series: International Conference on Computing, Communication and Learning

Abstract

In the contemporary age of cloud computing, a vast array of resources in the type of services is provided to the cloud clients upon demand to increase process output

Ensemble-Based Transfer Learning for Multi-Class Plant Disease Detection Us VGG16, ResNet50, and Xception Models

Publisher: IEEE Cite This PDF

Popuri Mohana Siva Lakshmi ; K. LakshmiNadh ; K.V. Narasimha Reddy ; Dodda Venkata Reddy **All Authors**

Abstract:
In the world, plant diseases pose a serious threat to agricultural productivity and food security. Early, accurate, rapid identification of plant diseases is important for con-trolling loss of crops. In the following research, transfe learning models VGG16, ResNet50, and Xception are applied to attempt overcoming this challenge of multicla disease detection. To improve classification accuracy, we propose an ensemble model that combines the stren these pre-trained networks. Multiple plant species and disease categories were experimented on extensively c publicly available plant disease datasets. The results show that ensemble model achieves better precision, pre and recall than individual models and therefore presents a robust solution for identifying several plant diseases together as a pack. Results from the experiment demonstrate that the proposed method could be deployed in agricultural systems and have potential to provide a scalable and efficient diagnostic tool for farmers and agroi to detect plant diseases and reduce their impact. This work is among the growing body of work in AI based agi solutions and indicates that transfer learning and ensemble techniques are promising in precision farming.

Published in: 2024 International Conference on IoT Based Control Networks and Intelligent Systems (ICICNI

Date of Conference: 17-18 December 2024

DOI: 10.1109/ICICNIS64247.2024.10823254

Date Added to IEEE *Xplore*: 10 January 2025

Publisher: IEEE

ISBN Information:

Conference Location: Bengaluru, India

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Unveiling the Potential of Deep Learning: A Multifaceted Approach to Pulmonary Disease Detection and Clinical Integration

Publisher: IEEE Cite This PDF

K LakshmiNadh ; Gurram Siva Anjali ; Pandi Jyoshna Devi ; Gude Lavanya ; Chalicheema Rajani ; Dodda Venkata Reddy **All Authors**

Abstract:
Pulmonary diseases are major challenges in health care basically because of the complexities of diagnosing and treating them. However, deep learning technology has shown that enhancing disease detection and integrating these technologies within healthcare environments is possible. This project aims to improve the accuracy of pulmonary disease diagnosis focusing on viral pneumonitis, bacterial pneumonitis, COVID-19, and normal lung conditions through deep learning models. Our models leverage sophisticated, specifically developed CNNs that identify subtle patterns and differences indicative of these diseases from a variety of clinical imaging modalities, including chest radiographs and computed tomography scans. In addition, the project explores ways of incorporating such AI-based ways into present-day clinical practice so that we can shift from traditional methods towards those informed by AI. During this research work among different groups of patients, we have conducted rigorous tests on our models against established diagnostic standards. The findings show significant changes in early detection and significantly reduced diagnostic error rates which emphasize the disruptive ability of deep learning to pulmonary disease management. It also discusses ethical and practical challenges in the use of AI in healthcare, particularly in ensuring patient privacy, making AI-driven decisions transparent, and the need for education and training of healthcare professionals. This work emphasizes the potential that deep learning possesses in revolutionizing the detection of pulmonary diseases and paves the way for its wide application in clinical practice.

Published in: 2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)

Date of Conference: 06-08 March 2025

DOI: 10.1109/IATMSI64286.2025.10984573

Date Added to IEEE *Xplore*: 09 May 2025

Publisher: IEEE

ISBN Information:

Conference Location: Gwalior, India

I. Introduction

Over the years, integrating deep learning into medical diagnostics has proved to be very helpful in improving disease detection accuracy and efficiency [1]. It is a great challenge for pulmonologic disorders as well as tuberculosis, viral pneumonia, bacterial pneumonia, and COVID-19 because they have complicated clinical presentations with overlapping symptoms [2]. Conventional diagnostic methods utilize mostly specialist interpretation but tend to suffer from subjectivity and scarcity constraints [3]. This study aims at using deep learning in a multi-pronged approach of pulmonary diseases diagnosis with various clinical data packed with radiographs for a more detailed and precise diagnosis [4]. The input variables used are tabled formats like; FVC, FEV1, and PEFR that equal each patient's individual profile assessed [5]; while for radiographic images we rely on convolutional neural networks (CNNs)-based methods that bear a resemblance to the currently working ConvNet4 model; hence relevant traits are extracted [6]. In order to maintain the quality and similarity of the clinical data, different techniques for feature extraction a[illegible]ng normalization, standardization, and one-hot encoding, especially for categ[illegible]s, and asthma [7]. The resulting data are then merged with a deep learning model with multiple modes which consists of a CNN (Convolutional Neural Network) intended for processing radiography images as well as a dense neural net for clinical information [8]. In

Generalizing Vehicle Manoeuvre Prediction Across Diverse Datasets

Publisher: IEEE Cite This PDF

Marella VenkataRao ; Dodda Venkata Reddy ; S. Siva Nageswara Rao ; Ameen Ul Hassan Khan ; Golla Avinash ; Pendela Chenchu Koushik All Authors

Abstract:
Due to the complex nature of automotive components and sensor data, predictive maintenance is essential to ensure the reliability and safety of the vehicle. This work introduces a new predictive algorithm for automotive engine health, designed as it will provide higher accuracy and faster decisions in detecting potential engine failures, linear Through discriminant analysis, Gaussian naive edges, support vector machines, decision trees, random forests, gradient enhancement, and AdaBoost, the program displays patterns and abnormalities that may indicate impending engine problems.The data set undergoes extensive preprocessing steps such as standardization, handling missing values, and feature engineering to improve model performance. The evaluation criteria used include accuracy, precision, and confusion matrix, with special attention to prevent overfitting through regularization and the early stop method. In the developed model, the group method, especially stacked model 1, obtains impressive results with a model accuracy of 0.99. This high accuracy highlights the effectiveness of the ensemble approach in managing forecasts. The model's ability to deliver real-time analysis and early warning can help significantly reduce maintenance costs, prevent failures, and enhance vehicle safety, resulting in improved vehicle engine health during the maintenance process.

Published in: 2024 International Conference on Emerging Research in Computational Science (ICERCS)

Date of Conference: 12-14 December 2024 **DOI:** 10.1109/ICERCS63125.2024.10895692

Date Added to IEEE *Xplore*: 27 February 2025 **Publisher:** IEEE

ISBN Information: **Conference Location:** Coimbatore, India

I. Introduction

The birth of Industry 4.0 has completely transformed the automotive industry, especially in vehicle fault detection systems. Traditional methods for monitoring the health of vehicles rely on scheduled maintenance or reactive repairs after failures, which are inefficient because they come with high costs and prolonged downtime. Artificial intelligence (AI) and Internet of Things (IoT) [illegible] generate VIHMS that monitor the [illegible] gathering data from sensors and actuators for predictive maintenance and fault detection

Authors
Figures
References
Keywords
Metrics

Beyond Parental Height: A Multi-Model Deep Learning Approach for Personalized Adult Height Prediction

Publisher: IEEE Cite This PDF

S. Siva Nageswara Rao ; Siva Nagendra Akurathi ; Guntur Gowtham ; Challa Ravi Sankar ; Marella Venkata Rao All Authors

Abstract:
A new multi-model deep learning approach is proposed for the prediction of adult height from the Galton historical dataset with advanced feature engineering. Traditional approaches to height prediction have relied on linear relationships between the heights of parents and their offspring, which cannot explain the more intricate interplay of genetic, environmental, and lifestyle factors. This study bridges the gap by integrating other influences, such as birth order and physical activity, in developing a more holistic model for height prediction. Experiments were performed on raw and processed data, mainly on the impact of removing outliers on the accuracy of the model. Results reflect the fact that a multi-modeling system would predict better than the single-model scheme because combining all the factors is thought to make it more flexible and reliable. Data pre-processing was a very important activity, particularly outlier handling since results indicated that the predictive accuracy significantly improved when outliers were removed. This underlines robust data cleaning in machine learning algorithms. In summary, this study furnishes the pediatrician and the parent with a useful tool in delivering more reliable growth forecasts: underlining the role advanced data science techniques can play within personalized healthcare. This advances height prediction but lays grounds for further studies in individually modeling growth.

Published in: 2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)

Date of Conference: 06-08 March 2025

DOI: 10.1109/IATMSI64286.2025.10985098

Date Added to IEEE *Xplore*: 09 May 2025

Publisher: IEEE

ISBN Information:

Conference Location: Gwalior, India

I. Introduction

One of the health metrics is being tall, which is maintained by the interplay of complex genetic and environmental factors. In this light, WHO, CDC, among others, monitor children's growth by tracking data associated with population heights. Cohort studies have en rrelate [1]. A major dataset involved in growth curve research and models, such a tal Halt Model, consists of Galton's

Authors

Figures

References

Keywords

Metrics

Advanced Pest Identification: An Efficient Deep Learning Approach Using VGG Networks

Publisher: IEEE Cite This

K. Lakshminadh ; Divvela Chandu Venkateswara Guptha ; Jujjuri Sai ; Kandula Rajesh ; Sireesha Moturi ; Yaragani Neelima •••

Abstract:
Accurate pest identification is crucial for both effective pest management and crop protection. Pests must be found early in order to minimise damage and guarantee crop s... **Show More**

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Rainfall Prediction Using Machine Learning

Publisher: IEEE Cite This PDF

S.V.N. Sreenivasu ; Shaik. Rafi ; V.V.A.S. Lakshmi ; S. Sivanageswara Rao ; Ch. Rajani **All Authors**

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Abstract:
The title is "Rainfall Prediction Using Machine Learning". The initiative's dataset is written in Python and stored in Microsoft Excel. A wide range of machine learning algorithms are used to discover which strategy generates the best accurate predictions. In many sections of the country, rainfall forecasting is critical for avoiding major natural disasters. This forecast was created using a variety of machine learning approaches, including catboost, xgboost, decision tree, random forest, logistic regression, neural network, and light gbm. It incorporates several components. The Weather Dataset was utilized. The primary goal of the research is to evaluate a variety of algorithms and determine which one performs best. Farmers may greatly profit from growing the appropriate crops based on the amount of water they require.

Published in: 2024 2nd International Conference on Recent Trends in Microelectronics, Automation, Computing and Communications Systems (ICMACC)

Date of Conference: 19-21 December 2024

DOI: 10.1109/ICMACC62921.2024.10894486

Date Added to IEEE *Xplore*: 26 February 2025

Publisher: IEEE

ISBN Information:

Conference Location: Hyderabad, India

Authors
Figures
References
Keywords
Metrics

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Generalizing Vehicle Manoeuvre Prediction Across Diverse Datasets

Publisher: IEEE Cite This PDF

Marella VenkataRao ; Dodda Venkata Reddy ; S. Siva Nageswara Rao ; Ameen Ul Hassan Khan ; Golla Avinash ; Pendela Chenchu Koushik **All Authors**

Abstract:
Due to the complex nature of automotive components and sensor data, predictive maintenance is essential to ensure the reliability and safety of the vehicle. This work introduces a new predictive algorithm for automotive engine health, designed as it will provide higher accuracy and faster decisions in detecting potential engine failures, linear Through discriminant analysis, Gaussian naive edges, support vector machines, decision trees, random forests, gradient enhancement, and AdaBoost, the program displays patterns and abnormalities that may indicate impending engine problems.The data set undergoes extensive preprocessing steps such as standardization, handling missing values, and feature engineering to improve model performance. The evaluation criteria used include accuracy, precision, and confusion matrix, with special attention to prevent overfitting through regularization and the early stop method. In the developed model, the group method, especially stacked model 1, obtains impressive results with a model accuracy of 0.99. This high accuracy highlights the effectiveness of the ensemble approach in managing forecasts. The model's ability to deliver real-time analysis and early warning can help significantly reduce maintenance costs, prevent failures, and enhance vehicle safety, resulting in improved vehicle engine health during the maintenance process.

Published in: 2024 International Conference on Emerging Research in Computational Science (ICERCS)

Date of Conference: 12-14 December 2024

DOI: 10.1109/ICERCS63125.2024.10895692

Date Added to IEEE *Xplore*: 27 February 2025

Publisher: IEEE

ISBN Information:

Conference Location: Coimbatore, India

23

Conference Paper

Beyond Parental Height: A Multi-Model Deep Learning Approach for Personalized Adult Height Prediction

March 2025

DOI:10.1109/IATMSI64286.2025.10985098

Conference: 2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)

Authors:

S. Siva Nageswara Rao · **Siva Nagendra Akurathi** · **Guntur Gowtham** · **Challa Ravi Sankar**

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Bone Age Estimation and Prediction of Final Adult Height Using Deep Learning

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Ensemble-Based Transfer Learning for Multi-Class Plant Disease Detection Us VGG16, ResNet50, and Xception Models

Publisher: IEEE Cite This PDF

Popuri Mohana Siva Lakshmi ; K. LakshmiNadh ; K.V. Narasimha Reddy ; Dodda Venkata Reddy **All Authors**

Abstract:
In the world, plant diseases pose a serious threat to agricultural productivity and food security. Early, accurate, rapid identification of plant diseases is important for con-trolling loss of crops. In the following research, transfe learning models VGG16, ResNet50, and Xception are applied to attempt overcoming this challenge of multicla disease detection. To improve classification accuracy, we propose an ensemble model that combines the stren these pre-trained networks. Multiple plant species and disease categories were experimented on extensively c publicly available plant disease datasets. The results show that ensemble model achieves better precision, pre and recall than individual models and therefore presents a robust solution for identifying several plant diseases together as a pack. Results from the experiment demonstrate that the proposed method could be deployed in agricultural systems and have potential to provide a scalable and efficient diagnostic tool for farmers and agro to detect plant diseases and reduce their impact. This work is among the growing body of work in AI based agr solutions and indicates that transfer learning and ensemble techniques are promising in precision farming.

Published in: 2024 International Conference on IoT Based Control Networks and Intelligent Systems (ICICNI

Date of Conference: 17-18 December 2024

DOI: 10.1109/ICICNIS64247.2024.10823254

Date Added to IEEE *Xplore*: 10 January 2025

Publisher: IEEE

ISBN Information:

Conference Location: Bengaluru, India

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24

Conference Paper

Improving Passenger Experience: Predicting Airline Delays Through Machine Learning

March 2025
DOI:10.1109/IATMSI64286.2025.10985536
Conference: 2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)

Authors:

S. Siva Nageswara Rao **Yamini Chandana** **Kode Venkata Naveen** **Porugandi Ashok**

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A Personalized Flight Recommender System Based on Link Prediction in Aviation Data

Article Full-text available

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Stanley Kan · Dennis Wong · Keith Chau

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26

Conference Paper

Advanced Water Quality Prediction: Leveraging Genetic Optimization and Machine Learning

March 2025
DOI:10.1109/IATMSI64286.2025.10984615
Conference: 2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)

Authors:

S. Siva Nageswa Rao **Chagala Sunitha** **Shaik Najma** **Naladummi Nagalakshmi**

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Citations (0) References (16)

Improved genetic algorithm for multi-threshold optimization in digital pathology image segmentation

Article Full-text available

Sep 2024

Tangsen Huang · Haibing Yin · Xingru Huang

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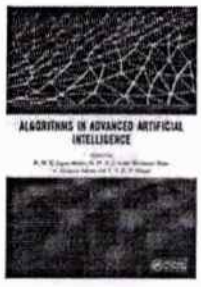
Chapter



Thyroid Disease Identification Using Machine Learning

By G. Saranya (/search?contributorName=G. Saranya&contributorRole=author&redirectFromPDP=true&context=ubx), K. Suresh Babu (/search?contributorName=K. Suresh Babu&contributorRole=author&redirectFromPDP=true&context=ubx), M. Sireesha (/search?contributorName=M. Sireesha&contributorRole=author&redirectFromPDP=true&context=ubx), G. Anuradha (/search?contributorName=G. Anuradha&contributorRole=author&redirectFromPDP=true&context=ubx), K. Chandrika (/search?contributorName=K. Chandrika&contributorRole=author&redirectFromPDP=true&context=ubx), Y. Keerthi (/search?contributorName=Y. Keerthi&contributorRole=author&redirectFromPDP=true&context=ubx)

Book Algorithms in Advanced Artificial Intelligence (https://www.taylorfrancis.com/books/mono/10.1201/9781003641537/algorithms-advanced-artificial-intelligence?refId=8da281f3-f232-4fa5-8c8c-8d79231ab344&context=ubx)

Edition	1st Edition
First Published	2025
Imprint	CRC Press
Pages	7
eBook ISBN	9781003641537

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ABSTRACT

< Previous Chapter (chapters/edit/10.1201/9781003641537-10/quality-improvement-mechanism-routing-using-throw-boxes-dtn-deepak-nedunuri-ch-ramadevi-satyanarayana-ch-madhava-rao?context=ubx)

Next Chapter > (chapters/edit/10.1201/9781003641537-12/polycystic-kidney-disease-identification-harnessing-deep-neural-networks-accurate-diagnosis-[illegible]tha-yugandhar-bokka-dileep-kumar-kadali-narayana-durga-rao-rambabu?context=ubx)

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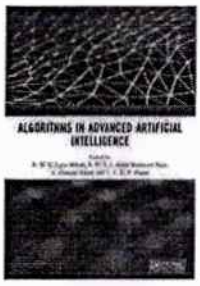
27

Chapter



Web-Based Early Stroke Detection: A Machine Learning Approach with Explainable Insights

By Kunda Suresh Babu (/search?contributorName=Kunda Suresh Babu&contributorRole=author&redirectFromPDP=true&context=ubx), Mahesh Babu Parchuri (/search?contributorName=Mahesh Babu Parchuri&contributorRole=author&redirectFromPDP=true&context=ubx), Aswiniduth Muthireddy (/search?contributorName=Aswiniduth Muthireddy&contributorRole=author&redirectFromPDP=true&context=ubx), Lakshmi Vara Prasad Gurram (/search?contributorName=Lakshmi Vara Prasad Gurram&contributorRole=author&redirectFromPDP=true&context=ubx), Naveen Satya Thallam (/search?contributorName=Naveen Satya Thallam&contributorRole=author&redirectFromPDP=true&context=ubx), Shaik Khaja Mohiddin Basha (/search?contributorName=Shaik Khaja Mohiddin Basha&contributorRole=author&redirectFromPDP=true&context=ubx), Sireesha Moturi (/search?contributorName=Sireesha Moturi&contributorRole=author&redirectFromPDP=true&context=ubx)

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Edition	1st Edition
First Published	2025
Imprint	CRC Press
Pages	8
eBook ISBN	9781003641537

ABSTRACT

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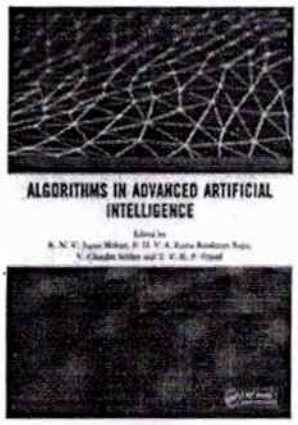

Next-Gen Attendance System

By S. V. N. Sreenivasu (/search?contributorName=S. V. N. Sreenivasu&contributorRole=author&redirectFromPDP=true&context=ubx), Ch. Rajani (/search?contributorName=Ch. Rajani&contributorRole=author&redirectFromPDP=true&context=ubx), Bogyam Indu (/search?contributorName=Bogyam Indu&contributorRole=author&redirectFromPDP=true&context=ubx), Thumu Tejawini (/search?contributorName=Thumu Tejawini&contributorRole=author&redirectFromPDP=true&context=ubx), Kongara Abhinaya (/search?contributorName=Kongara Abhinaya&contributorRole=author&redirectFromPDP=true&context=ubx), Sireesha Moturi (/search?contributorName=Sireesha Moturi&contributorRole=author&redirectFromPDP=true&context=ubx)

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First Published	2025
Imprint	CRC Press
Pages	6
eBook ISBN	9781003641537

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Explainable Fetal Ultrasound Classification with CNN and MLP Models

Publisher: IEEE Cite This

Dodda Venkatareddy ; K.V. Narasimha Reddy ; Yendluri Sowmya ; Yarlagadda Madhavi ; Shaik Chand Asmi ; Sireesha Moturi **All Authors**

Abstract:
Artificial Intelligence has greatly influenced healthcare, most particularly in medical imaging. This paper repres review in large form that classifies fetal ultrasound images with the use of convolutional neural networks and m Layer Perceptrons. While CNN is very good at spatial feature extraction in image classification, their lack of interpretability presents challenges toward applications in health. In this regard, we include methods of Explair (XAI), more precisely Local Interpre table Model-Agnostic Explanations (LIME), for giving more transparency a confidence in the decision-making process of such models. The research here utilizes 12,400 fetal ultrasound which were classified under six anatomical structures. The CNN and MLP models showed very promising clas performances of 93.24% and 91.17%, respectively. LIME was implemented to interpret model predictions and clearly identify factors contributing to the classification. The results also show that explainability enhances not in AI-based diagnostics but also model reliability in clinical settings.

Published in: 2024 First International Conference on Innovations in Communications, Electrical and Compute Engineering (ICICEC)

Date of Conference: 24-25 October 2024

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Publisher: IEEE

ISBN Information:

Conference Location: Davangere, India

Authors
Figures
References
Keywords
Metrics

30

Conference Paper

Text-Based Emotion Analysis: Approaches and Evaluations

March 2025

DOI:10.1109/IATMSI64286.2025.10984985

Conference: 2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)

Authors:

Chandana Yamani **Kothamasu Thrylokya** **Bijjala Sirisha** **Seetha Bhagyalatha**

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Text-Based Emotion Recognition Using Deep Learning Approach

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Aug 2022 · Comput Intell Neurosci

Drsantosh Kumar Bhartl · S. Varadhaganapathy · Rajeev Gupta · Amena Mahmoud

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Conference Paper

Enhancing Wine Quality Prediction Through Machine Learning Techniques

March 2025
DOI:10.1109/IATMSI64286.2025.10984544
Conference: 2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)

Authors:

Syed Rizwana **Pasupuleti Murali Priya** **Kapu Suvarshitha** **Modhepalli Gayathri**

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Citations (1) References (14)

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Conference Paper

Deep Learning Framework for Early Fire and Smoke Detection

December 2024

DOI:10.1109/SCOPES64467.2024.10991076

Conference: 2024 2nd International Conference on Signal Processing, Communication, Power and Embedded System (SCOPES)

Authors:

M. Sireesha
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Kata Ramya

Kota Supriya

Chennupati Jyothika

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Wildfire Detection with Deep Learning — a Case Study for the CICLOPE Project
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Drone network for early warning of forest fire and dynamic fire quenching plan generation

33

Advanced Pest Identification: An Efficient Deep Learning Approach Using VGG Networks

Publisher: IEEE Cite This

K. Lakshminadh ; Divvela Chandu Venkateswara Guptha ; Jujjuri Sai ; Kandula Rajesh ; Sireesha Moturi ; Yaragani Neelima •••

Abstract:
Accurate pest identification is crucial for both effective pest management and crop protection. Pests must be found early in order to minimise damage and guarantee crop s... **Show More**

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Conference Paper

Advanced Water Quality Prediction: Leveraging Genetic Optimization and Machine Learning

March 2025
DOI:10.1109/IATMSI64286.2025.10984615
Conference: 2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)

Authors:

S. Siva Nageswa Rao | Chagala Sunitha | Shaik Najma | Naladummi Nagalakshmi | T.G Ramnadh Babu | M. Sireesha

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Improved genetic algorithm for multi-threshold optimization in digital pathology image segmentation

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Automated passive income from stock market using machine learning and big data analytics with security aspects

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Conference Paper

DeepLearning-Based Tomato Leaf Disease Identification: Enhancing Classification with AlexNet

March 2025

DOI:10.1109/IATMSI64286.2025.10984969

Conference: 2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)

Authors:

s. N. Tirumala Rao · **Teja Charan Dulla** · **Vamsi Krishna Kolla** · **Guna Schekar Kurakula** · **Mothe Suneetha** · **M. Sireesha** · **Dodda Venkata Reddy**

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Conference Paper

CNN-Driven Detection of Abnormalities in PCG Signals Using Gammatonegram Analysis

November 2024

DOI:10.1109/InCoWoCo64194.2024.10863151

Conference: 2024 First International Conference for Women in Computing (InCoWoCo)

Authors:

M. Sireesha · Sumanth Tata · Somnath Katragadda · Venkata Pavan Kumar Laghumavarapu · Brahmaiah Lingala · Dodda Venkata Reddy

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Conference Paper

Enhanced Lung Cancer Detection Using Deep Learning Ensemble Approach

November 2024

DOI:10.1109/InCoWoCo64194.2024.10863245

Conference: 2024 First International Conference for Women in Computing (InCoWoCo)

Authors:

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Naga Revathi Dokku

Prathima Kasula

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Citations (0) References (15)

An ensemble deep learning model for risk stratification of invasive lung adenocarcinoma using thin-slice CT

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Jing Zhou · Bin Hu · Wei Feng · Ying Ji

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Deep Learning Techniques to Diagnose Lung Cancer

Article Full-text available

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Conference Paper

Enhanced Multi-Class Classification of Kidney Abnormalities Using VGG16 and Advanced CT Image Analysis Techniques

December 2024

DOI:10.1109/SCOPES64467.2024.10990409

Conference: 2024 2nd International Conference on Signal Processing, Communication, Power and Embedded System (SCOPES)

Authors:

Vijay Kumar Nukala · Mahesh Kavali · Jagadeesh Dasari · Srikanth Nuthalapati · Karuna Kumar Valicharla · M. Sireesha

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Conference Paper

Detecting Sarcasm Across Headlines and Text

March 2025

DOI:10.1109/IATMSI64286.2025.10984543

Conference: 2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)

Authors:

Shaik Rafi · **Ambati Lakshmi Niharika** · **Seva Neelima** · **Kadiyala Nikhitha** · **Mothe Sathyam Reddy** · **M. Sireesha**

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40

Conference Paper

Fake Profile Detection Using Machine Learning

March 2025

DOI:10.1109/IATMSI64286.2025.10985667

Conference: 2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)

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Explainable Fetal Ultrasound Classification with CNN and MLP Models

Publisher: IEEE Cite This PDF

Dodda Venkatareddy ; K.V. Narasimha Reddy ; Yendluri Sowmya ; Yarlagadda Madhavi ; Shaik Chand Asmi ; Sireesha Moturi All Authors

Abstract:
Artificial Intelligence has greatly influenced healthcare, most particularly in medical imaging. This paper represents a review in large form that classifies fetal ultrasound images with the use of convolutional neural networks and multi-Layer Perceptrons. While CNN is very good at spatial feature extraction in image classification, their lack of interpretability presents challenges toward applications in health. In this regard, we include methods of Explainable AI (XAI), more precisely Local Interpre table Model-Agnostic Explanations (LIME), for giving more transparency and confidence in the decision-making process of such models. The research here utilizes 12,400 fetal ultrasound images, which were classified under six anatomical structures. The CNN and MLP models showed very promising classification performances of 93.24% and 91.17%, respectively. LIME was implemented to interpret model predictions and to more clearly identify factors contributing to the classification. The results also show that explainability enhances not only trust in AI-based diagnostics but also model reliability in clinical settings.

Published in: 2024 First International Conference on Innovations in Communications, Electrical and Computer Engineering (ICICEC)

Date of Conference: 24-25 October 2024

DOI: 10.1109/ICICEC62498.2024.10808626

Date Added to IEEE *Xplore*: 30 December 2024

Publisher: IEEE

ISBN Information:

Conference Location: Davangere, India

I. Introduction

Over the years, artificial intelligence (AI) has taken a significant role in changing the healthcare scene, especially in medical imaging. Deep learning has been one of the many AI methods but has become the one that healthcare workers can use to make diagnoses and tr... ...ccurate. The main thing that makes

Authors
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Conference Paper

Enhancing Wine Quality Prediction Through Machine Learning Techniques

March 2025

DOI:10.1109/IATMSI64286.2025.10984544

Conference: 2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)

Authors:

Syed Rizwana | Pasupuleti Murali Priya | Kapu Suvarshitha | Modhepalli Gayathri | Rama Krishna Eluri | M. Sreesha

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

43

Conference Paper

Text-Based Emotion Analysis: Approaches and Evaluations

March 2025

DOI:10.1109/IATMSI64286.2025.10984985

Conference: 2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)

Authors:

Chandana Yamani · Kothamasu Thrylokya · Bijjala Sirisha · Seetha Bhagyalatha · Rama Krishna Eluri · M. Sireesha

References (15)

Text-Based Emotion Recognition Using Deep Learning Approach

Article Full-text available

Aug 2022 · Comput Intell Neurosci

Drsantosh Kumar Bharti · S. Varadhaganapathy · Rajeev Gupta · Amena Mahmoud

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A review on sentiment analysis and emotion detection from text

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44

Multimodal: A Text-Image based Cyber-Bullying Detecting with Deep Learning

Publisher: IEEE Cite This PDF

Ambati Ankarao ; Shaik Rafi ; Rama Krishna Eluri ; K. V. Narasimha Reddy **All Authors**

Abstract:
The practice of categorizing and identifying cyber-bullying behavior, which include using technology to harass or intimidate people—usually through online platforms—is known as cyberbullying detection. To tackle this, we took a look at a dataset that was made public and labeled as bully or non-bully based on text, image, and image-text. Then, we proposed a deep learning model that could identify cyberbullying in multimodal data. Bullying in text is detected using the XLM-RoBERTa with BiGRU model, while bullying in images is identified by the VGG16 pre-trained model. Using attention processes, CLIP, feedback mechanisms, CentralNet, and other tools, we combined these models (VGG16 + XLM-RoBERTa and BiGRU) and developed a model for identifying cyberbullying in image-text based memes.With a respectable accuracy of 72%, our final model demonstrated that the system is capable of identifying the majority of cyberbullying incidents.

Published in: 2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)

Date of Conference: 06-08 March 2025

DOI: 10.1109/IATMSI64286.2025.10985245

Date Added to IEEE *Xplore*: 09 May 2025

Publisher: IEEE

ISBN Information:

Conference Location: Gwalior, India

I. Introduction

The use of social media platforms and digital technology is growing quickly in the current era. Cyberbullying can happen via a number of platforms, including WhatsApp, Instagram, Facebook, and Twitter. The use of digital technology to threaten, harass, or bully a p... Major consequences including ... emotional pain, anxiety, sadness and eve... this. Cyberbullying needs to be ...

Authors

Ambati Ankarao
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References

Keywords

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ScienceDirect

Biomedical Signal Processing and Control

Volume 100, Part C, February 2025, 106960

Compact Pyramidal dense mixed attention network for Diabetic retinopathy severity prediction under deep learning

M. Gargi [a], Rama Krishna Eluri [b], Om Prakash Samantray [c], Koduru Hajarathaiah [d]

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https://doi.org/10.1016/j.bspc.2024.106960

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Highlights

- Noise removal using the CE-NLG to minimize the error and processing time.
- To extract the features, E-ASpecT is used that minimizing the model time complexity.
- The selection of features is done using the DuSEO for reducing the convergence issues.
- To attain DR severity classification, a novel DL model called CPDenA is introduced.

Abstract

Hand Gesture Recognition: Enhancing Accuracy and Precision with Deep Learning

Publisher: IEEE Cite This PDF

T. G. Ramnadh Babu ; Dodda Venkata Reddy ; S.V.N. Sreenivasu ; K. Srinivasa Kalyan Ram ; Venkata Aravind Tunuguntla ; Shaik Hazare Khaja Mohiddin

Abstract:

Accurate, real-time recognition of hand gestures in dynamic environments remains challenging in human-comp interaction. This paper presents a hybrid deep learning model combining Convolutional Neural Networks (CNN Recurrent Neural Networks (RNN) using Long Short-Term Memory (LSTM) layers to capture both spatial and t information for dynamic hand gesture recognition. Trained on a dataset of six gestures-scroll-left, scroll-right, s scroll-down, zoom-in, and zoom-out-the model achieves an accuracy of 94.66%, with an F1 score of 0.94 and ROC of 0.95, indicating significant improvement over traditional models and practical viability in real-world app Key topics include data preprocessing, model architecture, hardware and software configurations, and perform comparisons with benchmarks. The paper concludes with discussions on limitations and future research direct enhance the model's adaptability and efficiency.

Published in: 2024 International Conference on Integrated Intelligence and Communication Systems (ICIICS)

Date of Conference: 22-23 November 2024

DOI: 10.1109/ICIICS63763.2024.10859441

Date Added to IEEE *Xplore*: 05 February 2025

Publisher: IEEE

ISBN Information:

Conference Location: Kalaburagi, India

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

Conference Paper

Boosting Network Intrusion Detection with Two-Level Ensemble Learning and Knowledge Distillation Approaches

December 2024

DOI:10.1109/SCOPES64467.2024.10990972

Conference: 2024 2nd International Conference on Signal Processing, Communication, Power and Embedded System (SCOPES)

Authors:

S.V.N. Sreenivasu | Macharla Bala Rangarao | Bollavaram Venkata Srinivasulu | Boddupalli Venkata Siva Rama Krishna | T G Ramnadh babu

References (17)

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

116

Conference Paper

Advanced Water Quality Prediction: Leveraging Genetic Optimization and Machine Learning

March 2025
DOI:10.1109/IATMSI64286.2025.10984615
Conference: 2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)

Authors:

S. Siva Nageswa Rao · Chagala Sunitha · Shaik Najma · Naladummi Nagalakshmi · T.G Ramnadh Babu · M. Sireesha

References (16)

Citations (0) References (16)

Improved genetic algorithm for multi-threshold optimization in digital pathology image segmentation

Article Full-text available

Sep 2024

Tangsen Huang · Haibing Yin · Xingru Huang

View Show abstract

***Automated passive income from* stock market using machine learning and big data analytics with security aspects**

Beyond Deep Features: Fusing Deep Learning with Local Textures for Enhanc Plant Disease Classification

Publisher: IEEE Cite This

Mothe Suneetha ; Tanniru Harshitha ; Yadala Sandhya ; Narra Divya ; S.N.Tirumala Rao ; Dodda Venkatareddy **All Authors**

Abstract:
Precision plant disease type plays a vital role in powerful crop control, ailment control, and safeguarding agricu productiveness and food security. Deep getting-to-know fashions, mainly deep convolutional neural networks (have established themselves as surprisingly effective in diagnosing plant illnesses from huge image datasets. However, they now and again struggle with differentiating sicknesses that appear visually similar due to confin nearby texture elements. This technique combines DCNNs for high-level function extraction with neighborhoo descriptors like Local Binary Patterns (LBP) to predict the plant leaf diseases and to improve ailment category accuracy. Even in hard conditions, this framework considerably increases sensitivity and specificity by means combining worldwide and neighborhood information. Experiments on benchmark datasets show that this mode outperforms traditional techniques with an accuracy of 96%. This answer gives a realistic, reliable device for re international agriculture, permitting farmers to make properly knowledgeable choices for preserving crop outpu health

Published in: 2024 International Conference on Integrated Intelligence and Communication Systems (ICIICS)

Date of Conference: 22-23 November 2024

DOI: 10.1109/ICIICS63763.2024.10859927

Date Added to IEEE *Xplore*: 05 February 2025

Publisher: IEEE

Conference Location: Kalaburagi, India

ISBN Information:
Electronic ISBN:979-8-3315-0496-0
Print on Demand(PoD) **ISBN:**979-8-3315-0497-7

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Figures

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118

Conference Paper

Deep Learning Framework for Early Fire and Smoke Detection

December 2024

DOI:10.1109/SCOPES64467.2024.10991076

Conference: 2024 2nd International Conference on Signal Processing, Communication, Power and Embedded System (SCOPES)

Authors:

M. Sireesha · Kata Ramya · Kota Supriya · Chennupati Jyothika · Kondabathini Vydurya · Mothe Suneetha

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119

Conference Paper

DeepLearning-Based Tomato Leaf Disease Identification: Enhancing Classification with AlexNet

March 2025

DOI:10.1109/IATMSI64286.2025.10984969

Conference: 2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)

Authors:

s. N. Tirumala Rao · **Teja Charan Dulla** · **Vamsi Krishna Kolla** · **Guna Schekar Kurakula** · **Mothe Suneetha** · **M. Sireesha** · **Dodda Venkata Reddy**

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120

Conference Paper

Fake Profile Detection Using Machine Learning

March 2025

DOI:10.1109/IATMSI64286.2025.10985667

Conference: 2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)

Authors:

s. N. Tirumala Rao | M. Sireesha | Suneetha Mothe | Ravi Lakshmi Sri Harsha | Najeer Shaik | Sistla V. S. Manikanta Rohit | Dodda Venkata Reddy

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Deep Learning Solutions for Soybean Leaf Infestation: A VGG19-Based Approach

Publisher: IEEE Cite This PDF

Chalicheema Rajani ; Dasari Triveni ; Borugadda Supriya ; Polimera BhagyaLakshmi ; Valicharla KarunaKumar **All Authors**

Abstract:
After all, soybean crops are an essential constituent in world agriculture. These plants generally become easy prey to attacks by pests like Diabrotica speciosa and caterpillars. The early detection of these attacks is pretty significant in reducing the damage from an economic point of view as well as an ecological one. This present study has been motivated by the above facts, proposing a newer deep learning-based solution using a transfer-learning approach with VGG19 CNN for efficient classification of soybean leaf images. In this work, we adopt the pre-trained VGG19 architecture for detecting pests infestation in soybean leaves and perform fine-tuning specific to the problem. In this work, employing transfer learning from VGG19 means utilizing the deep features learned from large-scale image datasets for adaptation in the specialized context of agricultural pest detection. This approach not only improves the model's accuracy but also reduces the dependency on huge amounts of training data, which is usually a bottleneck in agricultural applications. We test the performance of our model on a very challenging dataset of soybean leaf images, which yields a balanced accuracy of 99.5% on previously unseen test data.The contribution of this work can be both theoretical and practical. Theoretically, the study advances deep learning applications in plant pathology, showing how effective transfer learning will be in a new domain. In practice, our model is a potent tool for early detection of pest infestations that permits interventions in time and avoids huge economic and environmental losses.

Published in: 2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)

Date of Conference: 06-08 March 2025

DOI: 10.1109/IATMSI64286.2025.10985548

Date Added to IEEE *Xplore*: 09 May 2025

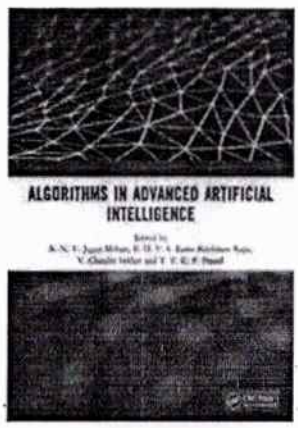
Publisher: IEEE

ISBN Information:

Conference Location: Gwalior, India

< Algorithms in Advanced Artificial Intelligence (https://www.taylorfrancis.com/books/edit/10.1201/9781003641537/algorithms-advanced-artificial-intelligence-jagan-mohan-rama-krishnam-raju-chandra-sekhar-prasad) Show Path

Chapter



Next-Gen Attendance System

By S. V. N. Sreenivasu (/search?contributorName=S. V. N. Sreenivasu&contributorRole=author&redirectFromPDP=true&context=ubx), Ch. Rajani (/search?contributorName=Ch. Rajani&contributorRole=author&redirectFromPDP=true&context=ubx), Bogyam Indu (/search?contributorName=Bogyam Indu&contributorRole=author&redirectFromPDP=true&context=ubx), Thumu Tejawini (/search?contributorName=Thumu Tejawini&contributorRole=author&redirectFromPDP=true&context=ubx), Kongara Abhinaya (/search?contributorName=Kongara Abhinaya&contributorRole=author&redirectFromPDP=true&context=ubx), Sireesha Moturi (/search?contributorName=Sireesha Moturi&contributorRole=author&redirectFromPDP=true&context=ubx)

Book Algorithms in Advanced Artificial Intelligence (https://www.taylorfrancis.com/books/mono/10.1201/9781003641537/algorithms-advanced-artificial-intelligence?refId=6af55822-6826-449a-aa64-6d1b16fb4afc&context=ubx)

Edition	1st Edition
First Published	2025
Imprint	CRC Press
Pages	6
eBook ISBN	9781003641537

Rainfall Prediction Using Machine Learning

Publisher: IEEE Cite This PDF

S.V.N. Sreenivasu ; Shaik. Rafi ; V.V.A.S. Lakshmi ; S. Sivanageswara Rao ; Ch. Rajani **All Authors**

1
Full
Text View

Abstract:
The title is "Rainfall Prediction Using Machine Learning". The initiative's dataset is written in Python and stored in Microsoft Excel. A wide range of machine learning algorithms are used to discover which strategy generates the best accurate predictions. In many sections of the country, rainfall forecasting is critical for avoiding major natural disasters. This forecast was created using a variety of machine learning approaches, including catboost, xgboost, decision tree, random forest, logistic regression, neural network, and light gbm. It incorporates several components. The Weather Dataset was utilized. The primary goal of the research is to evaluate a variety of algorithms and determine which one performs best. Farmers may greatly profit from growing the appropriate crops based on the amount of water they require.

Published In: 2024 2nd International Conference on Recent Trends in Microelectronics, Automation, Computing and Communications Systems (ICMACC)

Date of Conference: 19-21 December 2024

DOI: 10.1109/ICMACC62921.2024.10894486

Date Added to IEEE *Xplore*: 26 February 2025

Publisher: IEEE

ISBN Information:

Conference Location: Hyderabad, India

Harnessing RNN for Enhanced Hate Speech Detection in Social Media

Publisher: IEEE Cite This PDF

CH Rajani ; Thodeti Srinadh ; Kota Varun Chand ; Bathula Anil Kumar ; S.V.N. Sreenivasu ; Dodda Venkatareddy **All Authors**

Abstract:
Social media offers a platform for both conversation and hate speech, making effective detection mechanisms necessary. This paper proposes a deep learning framework using RNN for hate speech detection on Twitter, Ir and Facebook. Key findings show that the RNN-based model outperforms LSTM and GRU models, achieving accuracies of 96.75% on Twitter, 95.3% on Instagram, and 98.20% on Facebook. These results demonstrate t RNNs better capture contextual relationships within text compared to traditional methods, while also emphasiz need for specialized techniques in detecting hate speech across platforms. The pro- posed model holds signifi potential for enhancing online safety through efficient hate speech recognition. The analysis confirms RNNs' s accuracy for platform-specific hate speech detection, offering a powerful tool for improving detection strategies online safety.

Published in: 2024 International Conference on Integrated Intelligence and Communication Systems (ICIICS)

Date of Conference: 22-23 November 2024

DOI: 10.1109/ICIICS63763.2024.10859351

Date Added to IEEE *Xplore*: 05 February 2025

Publisher: IEEE

ISBN Information:

Conference Location: Kalaburagi, India

Stress Detection Using Machine Learning and NLP Over Social Interactions

Publisher: IEEE Cite This PDF

S.V.N Sreenivasu ; Ch. Rajani ; Birlangi Usha Rani ; Arangi Dasaradha **All Authors**

Abstract:
In our modern society, the prevalence of stress-related psychological disorders has reached alarming levels, le devastating consequences such as suicides and crimes. Recognizing the urgent need for early intervention of related psychological disorders in this paper we explores a novel approach leveraging social media data, Natu Language Processing (NLP), and machine learning algorithms to detect and classify stress levels in individuals analyzing the messages shared on social media platforms, we aim to proactively identify signs of psychologica and provide timely support and intervention. Through this innovative application of technology, we aspire to co to the prevention of suicides, reduction of crime rates, and enhancement of overall mental well-being in our communities. In this paper we found best accuracy for random forest model.

Published in: 2024 Second International Conference on Advances in Information Technology (ICAIT)

Date of Conference: 24-27 July 2024

DOI: 10.1109/ICAIT61638.2024.10690542

Date Added to IEEE *Xplore*: 04 October 2024

Publisher: IEEE

ISBN Information:

Conference Location: Chikkamagaluru, Karnatak

Automatic Attendance Management System Using CNN

Publisher: IEEE Cite This PDF

S.V.N Sreenivasu ; Ch. Rajani ; Birlangi Usha Rani ; Arangi Dasaradha ; Shaik Rafi **All Authors**

Abstract:
Facial recognition technology plays a crucial role in various applications, from enhancing security at banks and organizations to streamlining attendance tracking in public gatherings and educational institutions. Traditional methods of attendance marking, such as signatures, names, and biometrics, can be time-consuming and error-prone. To address these challenges, a smart attendance system is proposed, leveraging Deep Learning, Convolutional Neural Networks (CNN), and the OpenCV library in Python for efficient face detection and recognition. The system utilizes advanced algorithms, including Eigen faces and fisher faces, to recognize faces accurately. While deep learning models excel with large datasets, they may not perform optimally with few samples. By comparing input faces with images in the dataset, the system automatically updates recognized names and timestamps into a CSV file, which is then sent to the respective organization's head. Additionally, the system allows users to upload a single photo or a group photo, and it returns matched photos as output using a CNN. This feature enhances the system's flexibility and usability, providing users with a convenient way.

Published in: 2024 4th International Conference on Artificial Intelligence and Signal Processing (AISP)

Date of Conference: 26-28 October 2024

DOI: 10.1109/AISP61711.2024.10870740

Date Added to IEEE *Xplore*: 12 February 2025

Publisher: IEEE

ISBN Information:

Conference Location: VIJAYAWADA, India

ISSN Information:

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Dept of CSE, Narasa

Conference Paper

Unveiling the Potential of Deep Learning: A Multifaceted Approach to Pulmonary Disease Detection and Clinical Integration

March 2025

DOI:10.1109/IATMSI64286.2025.10984573

Conference: 2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)

Authors:

K LakshmiNadh | Gurram Siva Anjali | Pandi Jyoshna Devi | Gude Lavanya | Chalicheema Rajani | Dodda Venkata Reddy

References (14)

PulmoNet: a novel deep learning based pulmonary diseases detection model

Article Full-text available

Feb 2024 · BMC Med Imag

Abdulrahman Tosho Abdulahi · Roseline Ogundokun · Ajiboye Raimot Adenike · Yusuf Kola Ahmed

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Clinical Characteristics, Diagnosis, Treatment, and Mortality Rate of TB/COVID-19

AI-Driven Alignment of Educational Programs with Industry Needs and Emerging Skillsets

PDF (574KB), PP.15-28

Views: **155** Downloads: **29**

Author(s)

Satheeskumar R. [1,*] Ch. V. Satyanarayana [2] Talatoti Ratna Kumar [3] Koteswara Rao M. [1] Suresh M. [1]

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DOI: https://doi.org/10.5815/ijmecs.2025.03.02

Received: 1 Aug. 2024 / Revised: 8 Oct. 2024 / Accepted: 23 Feb. 2025 / Published: 8 Jun. 2025

Index Terms

Artificial Intelligence, Adaptive learning, Emerging skillsets, Future skills, Industry needs, Machine learning

Abstract

This research investigates the transformative potential of Artificial Intelligence (AI) in aligning educational programs with industry requirements and emerging skill sets. Developed and preliminarily tested an AI-driven framework designed to personalize learning paths, recommend pertinent educational content, and improve student engagement. The AI models achieved a peak classification accuracy of 90% in identifying educational materials relevant to industry needs, with an optimized average recommendation response time of 0.4 seconds. These results were derived from pilot testing involving 300 students (150 in the control group and 150 in the experimental group), with statistical significance confirmed using t-tests and chi-square tests. In pilot studies, students using AI-recommended materials experienced an average improvement of 15% in assessment scores compared to those using traditional methods. To validate these improvements, used both t-tests and chi-square tests to confirm statistical significance, with a control group of 150 students following traditional educational methods. Additionally, educators reported a 75% engagement rate with AI-driven learning paths, indicating strong acceptance and effective integration of AI tools within educational environments. The control group comparison showed that students using traditional methods had a significantly lower engagement rate of 60%, confirming the higher efficacy of the AI system. However, these results should be interpreted cautiously as further detailed statistical analysis and control mechanisms are necessary to fully validate the effectiveness of the AI framework. The study highlights the importance of addressing ethical considerations such as data privacy, algorithmic bias, and transparency to ensure responsible AI deployment. The results underscore AI's potential to enhance educational outcomes, adapt curricula dynamically, and better prepare students for future career demands, contributing to a more relevant and industry-aligned educational system.

Cite This Paper

Satheeskumar R., Ch. V. Satyanarayana, Talatoti Ratna Kumar, Koteswara Rao M., Suresh M., "AI-Driven Alignment of Educational Programs with Industry Needs and Emerging Skillsets", International Journal of Modern Education and Computer Science(IJMECS), Vol.17, No.3, pp. 15-28, 2025. DOI:10.5815/ijmecs.2025.03.02

Reference

[1]Kamalov, F.; Santandreu Calonge, D.; Gurrib, I. New Era of Artificial Intelligence in Education: Towards a Sustainable Multifaceted Revolution. Sustainability 2023, 15, 12451. "doi:10.3390/su151612451

[2]Kaledio, Potter and Robert, Abill and Frank, Louis, The Impact of Artificial Intelligence on Students' Learning Experience (February 1, 2024). Available at "doi:10.2139/ssrn.4716747".

[3]Ammar Abulibdeh, Esmat Zaidan, Rawan Abulibdeh, Navigating the confluence of artificial intelligence and education for sustainable development in the era of industry 4.0: Challenges, opportunities, and ethical dimensions, Journal of Cleaner Production, Volume 437, 2024, 140527, ISSN 0959-6526, "doi:10.1016/j.jclepro.2023.140527".

[4]C. Guan, J. Mou and Z. Jiang, J. of I. S. Jiang, Artificial intelligence innovation in education: A twenty-year data-driven historical analysis, vol. 4, no. 4, pp. 134-147, 2020.

[5]Abbas, Asad. (2024). Enhancing Student Engagement through AI-driven Analytics in Higher Education Institutions. "doi:10.13140/RG.2.2.28982.47682"

[6]Jane Southworth, Kati Migliaccio, Joe Glover, Ja'Net Glover, David Reed, Christopher McCarty, Joel Brendemuhl, Aaron Thomas, Developing a model for AI Across the curriculum: Transforming the higher education landscape via innovation in AI literacy, Computers and Education: Artificial Intelligence,Volume

ScienceDirect

Oral Oncology Reports

Volume 14, June 2025, 100749

Original Research Article

AI-driven biomarker discovery for early diagnosis and prognosis in oral oncology

Suresh Munnangi, Satheeskumar R

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https://doi.org/10.1016/j.oor.2025.100749

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Highlights

- This study leverages AI-driven models for early oral cancer detection by integrating multi-omics data to identify potential biomarkers and enhance clinical outcomes.
- AI models achieve high accuracy (92%) and sensitivity (90%) in early-stage oral cancer detection.
- Key biomarkers, including TP53, P16, and KRAS, are identified for diagnosis and personalized treatment.
- Kaplan-Meier survival analysis stratifies patients into low-, moderate-, and high-risk groups.
- ROC curve analysis validates diagnostic models with an AUC of 0.92, ensuring clinical relevance.

AI-Driven Alignment of Educational Programs with Industry Needs and Emerging Skillsets

PDF (574KB), PP.15-28

Views: **155** Downloads: **29**

Author(s)

Satheeskumar R. [1,*] Ch. V. Satyanarayana [2] Talatoti Ratna Kumar [3] Koteswara Rao M. [1] Suresh M. [1]

1. Department of Computer Science and Engineering, Narasaraopeta Engineering College, Andhra Pradesh-522601, India
2. Department of CSE - AIML, Malla Reddy Engineering College (Autonomous), Telangana-500100, India
3. Department of Computer Science and Engineering, Koneru Lakshmaiah Education Foundation, Andhra Pradesh, India

* Corresponding author.

DOI: https://doi.org/10.5815/ijmecs.2025.03.02

Received: 1 Aug. 2024 / Revised: 8 Oct. 2024 / Accepted: 23 Feb. 2025 / Published: 8 Jun. 2025

Index Terms

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Abstract

This research investigates the transformative potential of Artificial Intelligence (AI) in aligning educational programs with industry requirements and emerging skill sets. Developed and preliminarily tested an AI-driven framework designed to personalize learning paths, recommend pertinent educational content, and improve student engagement. The AI models achieved a peak classification accuracy of 90% in identifying educational materials relevant to industry needs, with an optimized average recommendation response time of 0.4 seconds. These results were derived from pilot testing involving 300 students (150 in the control group and 150 in the experimental group), with statistical significance confirmed using t-tests and chi-square tests. In pilot studies, students using AI-recommended materials experienced an average improvement of 15% in assessment scores compared to those using traditional methods. To validate these improvements, used both t-tests and chi-square tests to confirm statistical significance, with a control group of 150 students following traditional educational methods. Additionally, educators reported a 75% engagement rate with AI-driven learning paths, indicating strong acceptance and effective integration of AI tools within educational environments. The control group comparison showed that students using traditional methods had a significantly lower engagement rate of 60%, confirming the higher efficacy of the AI system. However, these results should be interpreted cautiously as further detailed statistical analysis and control mechanisms are necessary to fully validate the effectiveness of the AI framework. The study highlights the importance of addressing ethical considerations such as data privacy, algorithmic bias, and transparency to ensure responsible AI deployment. The results underscore AI's potential to enhance educational outcomes, adapt curricula dynamically, and better prepare students for future career demands, contributing to a more relevant and industry-aligned educational system.

Cite This Paper

Satheeskumar R., Ch. V. Satyanarayana, Talatoti Ratna Kumar, Koteswara Rao M., Suresh M., "AI-Driven Alignment of Educational Programs with Industry Needs and Emerging Skillsets", International Journal of Modern Education and Computer Science(IJMECS), Vol.17, No.3, pp. 15-28, 2025. DOI:10.5815/ijmecs.2025.03.02

Reference

[1]Kamalov, F.; Santandreu Calonge, D.; Gurrib, I. New Era of Artificial Intelligence in Education: Towards a Sustainable Multifaceted Revolution. Sustainability 2023, 15, 12451. "doi:10.3390/su151612451

[2]Kaledio, Potter and Robert, Abill and Frank, Louis, The Impact of Artificial Intelligence on Students' Learning Experience (February 1, 2024). Available at "doi:10.2139/ssrn.4716747".

[3]Ammar Abulibdeh, Esmat Zaidan, Rawan Abulibdeh, Navigating the confluence of artificial intelligence and education for sustainable development in the era of industry 4.0: Challenges, opportunities, and ethical dimensions, Journal of Cleaner Production, Volume 437, 2024, 140527, ISSN 0959-6526, "doi:10.1016/j.jclepro.2023.140527".

[4]C. Guan, J. Mou and Z. Jiang, J. o. J. S. Jiang, Artificial intelligence innovation in education: A twenty-year data-driven historical analysis, Vol. 4, no. 4, pp. 134-147, 2020.

[5]Abbas, Asad. (2024). Enhancing Student Engagement through AI-driven Analytics in Higher Education Institutions. "doi:10.13140/RG.2.2.28982.47682".

[6]Jane Southworth, Kati Migliaccio, Joe Glover, Ja'Net Glover, David Reed, Christopher McCarty, Joel Brendemuhl, Aaron Thomas, Developing a model for AI Across the curriculum: Transforming the higher education landscape via innovation in AI literacy, Computers and Education: Artificial Intelligence, Volume

< Advances in Electrical and Computer Technologies (https://www.taylorfrancis.com/books/edit/10.1201/9781003515470/advances-electrical-computer-technologies-thangaprakash-sengodan-sanjay-misra-murugappan)

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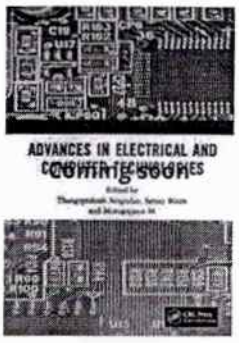
Chapter



Streamlined network intrusion detection: Feature selection optimization for higher accuracy and efficiency

By Kunda Suresh Babu (/search?contributorName=Kunda Suresh Babu&contributorRole=author&redirectFromPDP=true&context=ubx), Vallepu Srinivas (/search?contributorName=Vallepu Srinivas&contributorRole=author&redirectFromPDP=true&context=ubx), Yamani Chandana (/search?contributorName=Yamani Chandana&contributorRole=author&redirectFromPDP=true&context=ubx), G. Satish (/search?contributorName=G. Satish&contributorRole=author&redirectFromPDP=true&context=ubx), R. Dhandu Naik (/search?contributorName=R. Dhandu Naik&contributorRole=author&redirectFromPDP=true&context=ubx), Dodda Venkata Reddy (/search?contributorName=Dodda Venkata Reddy&contributorRole=author&redirectFromPDP=true&context=ubx)

Book Advances in Electrical and Computer Technologies (https://www.taylorfrancis.com/books/mono/10.1201/9781003515470/advances-electrical-computer-technologies?refId=e24c7777-417c-4800-ad79-7565680aae33&context=ubx)

Edition	1st Edition
First Published	2026
Imprint	CRC Press
Pages	11
eBook ISBN	9781003515470

ABSTRACT

The primary task of network intrusion detection systems (NIDS) is to defend communication networks from any attack attempts. However, the problem arises in analyzing a large amount of such data since it often contains irrelevant and noisy data that increases computation time and decreases the detection accuracy. In order to overcome such difficulties, a new approach to feature selection optimization was created that targets key features that have a high influence on the value of the target variable. By using this approach, the irrelevant features were cut down by 35%, a tuned decision tree classifier achieved a detection accuracy of 99.91%, and the computation time has been reduced to more than 65% compared to the CICIDS-2017 dataset with all features. This method makes sure that only the necessary information gets processed, which in turn increases the performance and effectiveness of NIDS, which is important in quick response and targeted threat evaluation in the ever-evolving cyber world.

< Previous Chapter (chapters/edit/10.1201/9781003515470-15/efficient-medical-diagnosis-using-machine-learning-algorithm-comparative-study-cataract-detection-analysis-nirupama-balasubramanian-dhevdharsan-shreya-reddy-suguna-yash-derasari?context=ubx)

B2

Conference Paper

Text-Based Emotion Analysis: Approaches and Evaluations

March 2025

DOI:10.1109/IATMSI64286.2025.10984985

Conference: 2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)

Authors:

Chandana Yamani · Kothamasu Thrylokya · Bijjala Sirisha · Seetha Bhagyalatha · Rama Krishna Eluri · M. Sireesha

References (15)

Citations (0) References (15)

Text-Based Emotion Recognition Using Deep Learning Approach

Article · Full-text available

Aug 2022 · Comput Intell Neurosci

Dr Santosh Kumar Bharti · S. Varadhaganapathy · Rajeev Gupta · Amena Mahmoud

View · Show abstract

A review on sentiment analysis and emotion detection from text

133

Conference Paper

Improving Passenger Experience: Predicting Airline Delays Through Machine Learning

March 2025

DOI:10.1109/IATMSI64286.2025.10985536

Conference: 2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)

Authors:

S. Siva Nageswara Rao · Yamini Chandana · Kode Venkata Naveen · Porugandi Ashok · Mallavarapu Rishik Mouli

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Open Access Proceeding Paper

A Novel Approach for Classifying Gliomas from Magnetic Resonance Images Using Image Decomposition and Texture Analysis †

by **Kunda Suresh Babu** [1,*] (mailto:sureshkunda546@gmail.com) (https://orcid.org/0000-0002-1533-5837), **Benjmin Jashva Munigeti** [2] (mailto:b_jashva.m@mallareddyuniversity.ac.in) (https://orcid.org/0009-0000-9230-1377), **Krishna Santosh Naidana** [3] (mailto:krishna.santosh10@gmail.com) and **Sesikala Bapatla** [4] (mailto:bapatlasesikala@kluniversity.in)

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† Presented at the 5th International Electronic Conference on Applied Sciences, 4–6 December 2024; **https://sciforum.net/event/ASEC2024 (https://sciforum.net/event/ASEC2024)**.

Eng. Proc. **2025**, *87*(1), 70; **https://doi.org/10.3390/engproc2025087070 (https://doi.org/10.3390/engproc2025087070)**

Published: 30 May 2025

< Advances in Electrical and Computer Technologies (https://www.taylorfrancis.com/books/edit/10.1201/9781003515470/advances-electrical-computer-technologies-thangaprakash-sengodan-sanjay-misra-murugappan)

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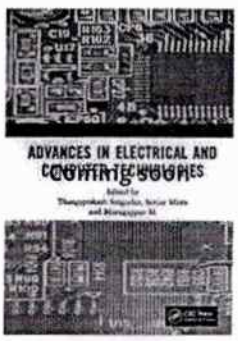
Chapter



Streamlined network intrusion detection: Feature selection optimization for higher accuracy and efficiency

By Kunda Suresh Babu (/search?contributorName=Kunda Suresh Babu&contributorRole=author&redirectFromPDP=true&context=ubx), Vallepu Srinivas (/search?contributorName=Vallepu Srinivas&contributorRole=author&redirectFromPDP=true&context=ubx), Yamani Chandana (/search?contributorName=Yamani Chandana&contributorRole=author&redirectFromPDP=true&context=ubx), G. Satish (/search?contributorName=G. Satish&contributorRole=author&redirectFromPDP=true&context=ubx), R. Dhandu Naik (/search?contributorName=R. Dhandu Naik&contributorRole=author&redirectFromPDP=true&context=ubx), Dodda Venkata Reddy (/search?contributorName=Dodda Venkata Reddy&contributorRole=author&redirectFromPDP=true&context=ubx)

Book Advances in Electrical and Computer Technologies (https://www.taylorfrancis.com/books/mono/10.1201/9781003515470/advances-electrical-computer-technologies?refId=e24c7777-417c-4800-ad79-7565680aae33&context=ubx)

Edition	1st Edition
First Published	2026
Imprint	CRC Press
Pages	11
eBook ISBN	9781003515470

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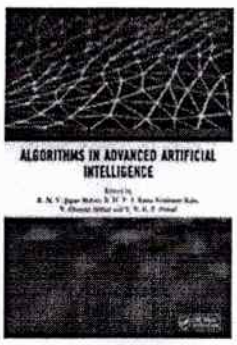
ABSTRACT

The primary task of network intrusion detection systems (NIDS) is to defend communication networks from any attack attempts. However, the problem arises in analyzing a large amount of such data since it often contains irrelevant and noisy data that increases computation time and decreases the detection accuracy. In order to overcome such difficulties, a new approach to feature selection optimization was created that targets key features that have a high influence on the value of the target variable. By using this approach, the irrelevant features were cut down by 35%, a tuned decision tree classifier achieved a detection accuracy of 99.91%, and the computation time has been reduced to more than 65% compared to the CICIDS-2017 dataset with all features. This method makes sure that only the necessary information gets processed, which in turn increases the performance and effectiveness of NIDS, which is important in quick response and targeted threat evaluation in the ever-evolving cyber world.

< Previous Chapter (chapters/edit/10.1201/9781003515470-15/efficient-medical-diagnosis-using-machine-learning-algorithm-comparative-study-cataract-detection-analysis-nirupama-balasubramanian-dhevdharsan-shreya-reddy-suguna-yash-devasaru context=ubx)

< Algorithms in Advanced Artificial Intelligence (https://www.taylorfrancis.com/books/edit/10.1201/9781003641537/algorithms-advanced-artificial-intelligence-jagan-mohan-rama-krishnam-raju-chandra-sekhar-prasad) Show Path

Chapter



Web-Based Early Stroke Detection: A Machine Learning Approach with Explainable Insights

By Kunda Suresh Babu (/search?contributorName=Kunda Suresh Babu&contributorRole=author&redirectFromPDP=true&context=ubx), Mahesh Babu Parchuri (/search?contributorName=Mahesh Babu Parchuri&contributorRole=author&redirectFromPDP=true&context=ubx), Aswiniduth Muthireddy (/search?contributorName=Aswiniduth Muthireddy&contributorRole=author&redirectFromPDP=true&context=ubx), Lakshmi Vara Prasad Gurram (/search?contributorName=Lakshmi Vara Prasad Gurram&contributorRole=author&redirectFromPDP=true&context=ubx), Naveen Satya Thallam (/search?contributorName=Naveen Satya Thallam&contributorRole=author&redirectFromPDP=true&context=ubx), Shaik Khaja Mohiddin Basha (/search?contributorName=Shaik Khaja Mohiddin Basha&contributorRole=author&redirectFromPDP=true&context=ubx), Sireesha Moturi (/search?contributorName=Sireesha Moturi&contributorRole=author&redirectFromPDP=true&context=ubx)

Book Algorithms in Advanced Artificial Intelligence (https://www.taylorfrancis.com/books/mono/10.1201/9781003641537/algorithms-advanced-artificial-intelligence?refId=b391b9cf-9d5c-4f20-8666-13403be54ccd&context=ubx)

Edition	1st Edition
First Published	2025
Imprint	CRC Press
Pages	8
eBook ISBN	9781003641537

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ABSTRACT

Stroke is a leading cause of disability and mortality worldwide, underscoring the need for effective early detection methods. This study introduces a web-based predictive system leveraging machine learning to assess individual stroke risk. Employing models such as XGBoost, Random Forest, and k-Nearest Neighbors (KNN), we trained on a balanced dataset incorporating crucial health features, including age, hypertension, and glucose levels. Hyperparameter tuning was implemented to optimize model performance, leading to the selection of an XGBoost model that achieved an accuracy of 93.2%, surpassing other tested algorithms. To enhance model interpretability, we applied SHAP (Shapley Additive Explanations) and LIME (Local Interpretable Model-agnostic Explanations), which provide valuable insights into feature importance and transparency in predictions. This enables healthcare providers to identify key factors in stroke risk assessment, such as age and blood pressure, with greater confidence and clarity. Data imbalance, a common issue in stroke prediction, was addressed using Synthetic Minority Over-Sampling Technique (SMOTE) to ensure that the model trained fairly on both stroke and non-stroke cases. This research not only highlights the feasibility of machine learning in predictive healthcare

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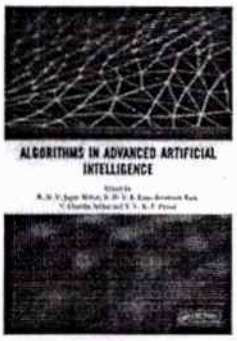
Chapter



Thyroid Disease Identification Using Machine Learning

By G. Saranya (/search?contributorName=G. Saranya&contributorRole=author&redirectFromPDP=true&context=ubx), K. Suresh Babu (/search?contributorName=K. Suresh Babu&contributorRole=author&redirectFromPDP=true&context=ubx), M. Sireesha (/search?contributorName=M. Sireesha&contributorRole=author&redirectFromPDP=true&context=ubx), G. Anuradha (/search?contributorName=G. Anuradha&contributorRole=author&redirectFromPDP=true&context=ubx), K. Chandrika (/search?contributorName=K. Chandrika&contributorRole=author&redirectFromPDP=true&context=ubx), Y. Keerthi (/search?contributorName=Y. Keerthi&contributorRole=author&redirectFromPDP=true&context=ubx)

Book Algorithms in Advanced Artificial Intelligence (https://www.taylorfrancis.com/books/mono/10.1201/9781003641537/algorithms-advanced-artificial-intelligence?refId=631ce86a-9060-4233-9130-073850c54a46&context=ubx)

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First Published	2025
Imprint	CRC Press
Pages	7
eBook ISBN	9781003641537

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ABSTRACT

Thyroid diseases, particularly hyperthyroidism and hypothyroidism, are increasingly prevalent and pose significant health risks if not diagnosed early. This study shows the use of different ML algorithms for identification of thyroid gland issues. The research employs five classifiers—LR, DT, RF, SVC and KNN to analyse a dataset of 3772 patients. The data preparation process includes removing unwanted data, unclear data, irrelevant data, selection of features, splitting the data to optimize the performance of these models, focusing on the secretion of hormones like Thyroid stimulating Hormone (TSH), Triiodothyronine (T3), and Thyroxine (T4). When the thyroid gland malfunctions, it can lead to either hyperthyroidism, characterized by excessive hormone production, or it causes overproduction or insufficient hormone production can result in serious health problems. The DT and RF algorithm show better results compared to other algorithms they achieved to 99.73% and 99.71%.

< Previous Chapter (chapters/edit/10.1201/9781003641537-10/quality-improvement-mechanism-routing-using-throw-boxes-dtn-deepak-nedunuri-ch-ramadevi-satyanarayana-ch-madhava-rao?context=ubx)
Next Chapter > (chapters/edit/10.1201/9781003641537-12/polycystic-kidney-disease-identification-harnessing-deep-neural-networks-accurate-diagnosis-haritha-yugandhar-bokka-dileep-kumar-kadali-narayana-durga-rao-rambabu?context=ubx)

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13.8

Optimized Deep Learning for Multi-Class Retinal Disease Classification Using ResNet-101

Publisher: IEEE Cite This PDF

Kunda Suresh Babu ; G. Saranya ; Kattiri. Santhoshkumar ; Talari Babu ; M.Venkata Thirumala ; Dodda Venkatareddy **All Authors**

Abstract:
Machine Learning (ML) approaches, such as Artificial Neural Networks (ANN), Recurrent Neural Networks (RNN), Deep Learning and advanced architectures like AlexNet and ResNet, are at the leading edge of studies in the identification and type of crucial sicknesses. These techniques leverage the strength of records-driven models to research complex scientific data, main to more correct and efficient diagnostic processes. This work suggests a ResNet-101 model that is meant to handle multiclass classification problems, offering potentially higher accuracy and deeper feature extraction at the cost of increased memory consumption and computational requirements. The ResNet-101 model was tested using the EyeNet dataset, which included 32 distinct types of diseases of the retina. The method achieved accuracy of 98.75% when evaluated on the EyeNet dataset.

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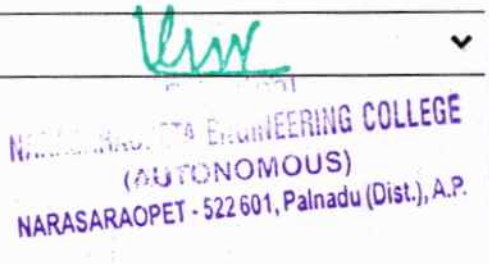
DOI: 10.1109/InCoWoCo64194.2024.10863808

Date Added to IEEE *Xplore*: 06 February 2025

Publisher: IEEE

ISBN Information:

Conference Location: Pune, India



Design of an integrated model combining recurrent convolutions and attention mechanism for time series prediction

Published: 22 March 2025

Volume 81, article number 642, (2025) Cite this article

The Journal of Supercomputing

Aims and scope

Submit manuscript

Nirmalajyothi Narisetty, Kunda Suresh Babu, Lakshmi Naga Jayaprada Gavarraju, Munigeti Benjmin Jashva, Seshu Bhavani Mallampati & Yuvaraja Boddu

Abstract

In applications such as healthcare, finance, and environmental monitoring, the demand for more reliable time-series prediction models has grown critical. Traditional models, such as VARMAx, struggle with capturing non−linear and complex dependencies inherent in sequential data. To address these challenges, this work proposes a hybrid model combining Long Short-Term Memory (LSTM) networks with Convolutional Neural Networks (CNNs) and incorporating attention mechanisms for improved precision and interpretability. LSTM networks are utilized to capture long-term dependencies in sequential data, while CNNs are employed to extract significant local features. The attention mechanism enhances the model's focus on critical time-series instances,

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Adaptive Ensemble of ML Regressors and LSTM for Stock Price Prediction

K. Suresh Babu, Keshetti Sreekala, S. Sushma, T. V. Sai Krishna, and A. Lakshmanarao

Abstract The importance of stock price prediction lies in its potential to inform investment decisions on risk management. It reflects the collective perceptions and expectations of investors regarding the company's performance and future prospects. This paper introduces an adaptive random forest-LSTM ensemble for stock price prediction, combining the strengths of random forest and long short-term memory (LSTM) models. This paper explores the application of machine learning (ML) and deep learning (DL) techniques for stock price prediction. Initially, four ML algorithms multiple linear regression (MLR), support vector regression (SVR), decision tree regression (DTR), and random forest regression (RFR) were employed, with RFR exhibiting a notable R-squared value of 0.98. Subsequently, three DL techniques, namely, RNN, LSTM, and GRU, were applied, with LSTM yielding favorable results. Later, a novel adaptive ensemble model, amalgamating the strengths of ML and DL methods, showcases robust performance with an R-squared value of 0.99 and a lower mean squared error (MSE) of 121. The proposed adaptive ensemble model is a promising approach for making more precise stock price predictions, potentially improving decision-making in dynamic market situations. It outperformed the existing conventional methods for stock price prediction.

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Enhancing E-learning Accessibility through AI(Artificial Intelligence) and Inclusive Design

Publisher: IEEE Cite This PDF

Chandramma R ; Kunda Suresh Babu ; K S Ranjith ; Akash Kumar Sinha ; Vikram Neerugatti ; D Somashekhara Reddy **All Authors**

Abstract:
E-learning has revolutionized the world of teaching and learning by providing learning possibilities for everyone. Making sure that these opportunities are fully inclusive to all learners, including those with disabilities, is the goal of this paper. This paper discusses the application of artificial intelligence and principles of inclusive design to enhance accessibility in e-learning with the ultimate goal of providing all learners with equal access to educational resources. Several applications of AI technologies hold great potential in making this transformation. The NLP and speech recognition tools can convert speech to text and text to speech, benefiting students with auditory or speech impairments. In general, adaptive learning systems with AI can produce personalization in educational content for the students regarding their learning styles and needs, which makes it possible for every student to interact efficiently with the material. Equally, these technologies offer descriptive audio to the visually impaired student and identify inaccessible elements within the educational materials. AI chatbots and virtual assistants support students in every step of their learning process, walking them through intricate concepts by dealing with their questions[9]. In fact, despite its potential to drive innovation, data privacy, technical limitations, and implementation costs are some of the challenges that AI currently faces. Addressing these challenges will be very important in achieving the full potential of AI-enhanced, inclusive e-learning. The current paper underscores the importance of AI and inclusive design toward the creation of an educational environment that is genuinely accessible and equitable for all learners.

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Date of Conference: 07-08 January 2025
DOI: 10.1109/ICMCSI64620.2025.10883148

Date Added to IEEE *Xplore*: 20 February 2025
Publisher: IEEE

ISBN Information:
Conference Location: Goathgaun, Nepal

Optimized Deep Learning for Multi-Class Retinal Disease Classification Using ResNet-101

Publisher: IEEE Cite This PDF

Kunda Suresh Babu ; G. Saranya ; Kattiri. Santhoshkumar ; Talari Babu ; M.Venkata Thirumala ; Dodda Venkatareddy **All Authors**

Abstract:
Machine Learning (ML) approaches, such as Artificial Neural Networks (ANN), Recurrent Neural Networks (RNN), Deep Learning and advanced architectures like AlexNet and ResNet, are at the leading edge of studies in the identification and type of crucial sicknesses. These techniques leverage the strength of records-driven models to research complex scientific data, main to more correct and efficient diagnostic processes. This work suggests a ResNet-101 model that is meant to handle multiclass classification problems, offering potentially higher accuracy and deeper feature extraction at the cost of increased memory consumption and computational requirements. The ResNet-101 model was tested using the EyeNet dataset, which included 32 distinct types of diseases of the retina. The method achieved accuracy of 98.75% when evaluated on the EyeNet dataset.

Published in: 2024 First International Conference for Women in Computing (InCoWoCo)

Date of Conference: 14-15 November 2024

DOI: 10.1109/InCoWoCo64194.2024.10863808

Date Added to IEEE *Xplore*: 06 February 2025

Publisher: IEEE

ISBN Information:

Conference Location: Pune, India

143

Real-Time Traffic Flow Optimization using Adaptive IoT and Data Analytics: A Novel DeepStreamNet Model

Publisher: IEEE Cite This PDF

V.S. Saranya ; Garimidi Subbarao ; Dega Balakotaiah ; Maloth Bhavsingh ; K. Suresh Babu ; Srinivasa Rao Dhanikonda **All Authors**

Abstract:
Thisstudy introduces the DeepStreamNet model, an advanced framework for enhancing real-time traffic management in urban environments using adaptive IoT and sophisticated big data analytics. Central to our approach is the integration of convolutional neural networks (CNNs), recurrent neural networks (RNNs), and long short-term memory (LSTM) units, which synergize with IoT devices to facilitate dynamic adaptation to fluctuating traffic conditions. The model excels in operational performance, achieving a notable accuracy of 94.7% in congestion prediction with an exceptionally low latency of only 45 ms per decision cycle and the capability to process up to 50,000 data points per second. These technical achievements have marked significant improvements over traditional traffic management systems, enhancing traffic flow efficiency and reducing congestion effectively. The results underscore the transformative potential of the DeepStreamNet model in urban traffic management and public safety, offering actionable insights for intelligent transportation systems and setting the stage for more informed urban planning. Looking forward, we suggest extending the application of our model to areas such as logistics and broader smart city initiatives, highlighting its adaptability and broad utility in various urban contexts

Published in: 2024 4th International Conference on Sustainable Expert Systems (ICSES)

Date of Conference: 15-17 October 2024
DOI: 10.1109/ICSES63445.2024.10763109
Date Added to IEEE *Xplore*: 03 December 2024
Publisher: IEEE
ISBN Information:
Conference Location: Kaski, Nepal

Heart Disease Prediction Using Different Machine Learning Approaches

| Conference paper | First Online: 09 January 2025

| pp 75–86 | Cite this conference paper

ICT Systems and Sustainability

(ICT4SD 2024)

Akash Kumar Sinha ✉, Geddam Varahagiri, K. Suresh Babu, Vikram Neerugatti, Santhosh Boddupalli & J. Somasekar

Part of the book series: Lecture Notes in Networks and Systems ((LNNS,volume 1163))

Included in the following conference series:
International Conference on ICT for Sustainable Development

Abstract

Machine learning algorithms are essential for deriving actionable insights and forecasts from large datasets in the big data era. This study explores the field of machine learning by examining how various algorithms are applied and performed on a particular dataset. The goal is to determine which machine learning algorithms produce the most accurate and dependable results by comparing how well they handle the complexities of the provided dataset. Heart disease is a major cause of morbidity and death as well as a major global health concern. Preventive healthcare relies heavily on the early identification and precise prediction of heart diseases. In the field of medicine, machine learning techniques have proven to be effective tools for diagnosing and predicting a wide range of illnesses, including heart diseases. This study explores heart diseases through the application of artificial intelligence and machine learning (AIML) techniques, with a particular emphasis on a large dataset that offers priceless insights into this important subject.

Journal of Theoretical and Applied Information Technology
31st May 2024. Vol.102. No. 10

ISSN: 1992-8645 www.jatit.org E-ISSN: 1817-3195

9INTRUSION DETECTION SYSTEM FOR CYBER SECURITY IN SMART AGRICULTURE WITH ABCIS TECHNIQUES

NASREEN SULTANA QUADRI, DR. YASMEEN, K DURGA CHARAN, K SURESH BABU, DR. SHAHANA TANVEER, K. SHYAM SUNDER REDDY, DR.M. KIRAN KUMAR

Lecturer, Dept of CSI, College of Science, Zulfi, Majmaah University, KSA.
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Asst.Prof, Department of CSE, *GITAM* (Deemed to be University), Hyderabad.

ABSTRACT

In this research, we examine and evaluate intrusion detection systems for cyber security in Agriculture 4.0. In particular, we outline the assessment criteria and cyber security risks that are utilised to assess an intrusion detection system's effectiveness for Agriculture 4.0. Then, we assess intrusion detection systems in light of cutting-edge technological developments, such as cloud computing, fog/edge computing, network virtualization, Internet of Things, autonomous tractors, drones, industrial agriculture, and smart grids. We offer a thorough classification of intrusion detection systems in each developing technology, based on the machine learning approach utilised. In addition, we provide public datasets and the frameworks used for implementation that were used to assess intrusion detection systems' performance for Agriculture 4.0. Lastly, we discuss the obstacles and potential lines of inquiry for future studies in intrusion detection for cyber security in Agriculture 4.0. Based on several technical paradigms, a new industrial revolution is underway. "Industry 4.0" (I4.0) is a concise way to communicate the desire to promote and direct this phenomena. Projects falling under this umbrella term are united by the belief that numerous critical technologies supporting Big Data Analytics and Cyber-Physical Systems are merging to form a new, highly automated, distributed, and dynamic production network. To ensure that this process proceeds smoothly and on schedule, new laws and cultural norms must be put in place. In this paper, we exclusively address the technological side, emphasising the exceptional I4.0 complexity that has been documented in the scientific literature.

Keywords: *ABCIS, IoT, blockchain, cyber intrusion detection, cloud computing, AI, SDN.*

1.INTRODUCTUON

The agricultural sector had significant transformations over the preceding three industrial revolutions, moving from traditional farming to mechanised farming and, more recently, precision agriculture. Although the industrial farming paradigm significantly increases production, a number of issues have slowly surfaced and become worse recently. It is anticipated that Industry 4.0 will propel the fourth agricultural revolution and once again transform the agriculture sector. The current state of industrial agriculture is reviewed in this study, along with the lessons that may be drawn from industrialised agricultural production methods, industrialised agricultural production patterns, and the industrialised agri-food supply chain.

In addition, five cutting-edge technologies are explored in relation to Agriculture 4.0: blockchain, robots, artificial intelligence, big data analytics, and the Internet of Things. We specifically concentrate on the major uses of these cutting-edge technologies in the field of agriculture and the associated research difficulties. The purpose of this study is to introduce readers, especially industry practitioners, to new avenues for research. While earlier research has concentrated on one or up to four related enablers, we take a look at ten technological enablers, which include the frequently mentioned Big Data, Internet of

Machine Learning Models for Predictive Marketing Analytics

Publisher: IEEE Cite This PDF

R. Satheeskumar ; Er. Vandana Dutt ; Ch. Srinivasa Reddy ; Zatin Gupta ; Sundarapandiyan Natarajan ; Muralidhar L B All Authors

Abstract:
The objective of this study is to perform an investigation into the utilization of machine literacy models within the framework of prophetic marketing analytics. Because they make use of vast amounts of consumer data, machine literacy algorithms can recognise patterns and trends that traditional statistical approaches would be unable to recognise. This study investigates several different machine literacy approaches, including retrogression analysis, decision trees, and neural networks, to read client motions and preferences. Examples of these techniques include. It is important to concentrate attention on the sensitive character of the model, as well as its interpretability and its connection to the real world. The results of the inquiry demonstrate how improved marketing strategies may be achieved through the utilization of these advanced models, which offer a practical perspective. The result of this is that it can eventually lead to improved client targeting, marketing juggernauts that are substantiated, and an improvement in return on investment. The purpose of this article is to make a contribution to the growing body of knowledge in the field of predictive analytics by giving an in-depth assessment of how machine literacy has the potential to alter marketing processes by making them more data-driven and efficient.

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ISBN Information:
Conference Location: Lucknow, India

I. INTRODUCTION

Because the landscape of marketing is constantly shifting, the capacity to anticipate customer behaviour and develop more targeted marketing tactics has become increasingly important for companies that want to maintain their competitive edge in the market. To rea rketing analytics makes use of literal data[1]. This provides marketers with valua ecisions and maximize their

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Oral Oncology Reports
Volume 14, June 2025, 100749

Original Research Article

AI-driven biomarker discovery for early diagnosis and prognosis in oral oncology

Suresh Munnangi, Satheeskumar R

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https://doi.org/10.1016/j.oor.2025.100749

Highlights

- This study leverages AI-driven models for early oral cancer detection by integrating multi-omics data to identify potential biomarkers and enhance clinical outcomes.
- AI models achieve high accuracy (92%) and sensitivity (90%) in early-stage oral cancer detection.
- Key biomarkers, including TP53, P16, and KRAS, are identified for diagnosis and personalized treatment.
- Kaplan-Meier survival analysis stratifies patients into low-, moderate-, and high-risk groups.
- ROC curve analysis validates diagnostic models with an AUC of 0.92, ensuring clinical relevance.

Abstract

This study presents an AI-powered multi-omics framework for early detection and prognosis of oral squamous cell carcinoma (OSCC), integrating genomic, transcriptomic, and proteomic data through advanced deep learning architectures. Analysing 1527 OSCC samples from TCGA and GEO databases, we developed a novel multimodal pipeline combining: (1) graph neural networks for heterogeneous data fusion, (2) LASSO regression for robust feature selection, and (3) explainable AI (SHAP, attention mechanisms) for clinical transparency. Our CNN-based diagnostic model demonstrated exceptional performance (accuracy: 93.2%, 95% CI: 91.5% for Stage I tumours; AUC: 0.96), significantly surpassing conventional

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Volume 13, March 2025, 100704

Original Research Article

AI-driven diagnostics and personalized treatment planning in oral oncology: Innovations and future directions

R. Satheeskumar ✉

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https://doi.org/10.1016/j.oor.2024.100704 ↗

Highlights

- The study aims to enhance oral cancer diagnostics using AI, especially with convolutional neural networks (CNNs).
- The CNN model achieved 93 % accuracy, 91 % sensitivity, and 94 % specificity in detecting oral cancers.
- AI models accurately tailored treatment recommendations with 87 % prediction accuracy based on patient characteristics.
- The study utilized a comprehensive dataset of imaging, clinical, and histopathological data to enhance AI's capabilities.
- AI-recommended treatments improved survival rates by 20 % and extended progression-free periods by 15%.

Abstract

The increasing incidence and complexity of oral cancers demand advancements in both diagnostic precision and individualized treatment strategies. This study investigates the application of artificial intelligence (AI), particularly through deep learning and machine learning models, to enhance diagnostic accuracy and support personalized treatment planning in oral oncology. Recent advancements in AI-driven diagnostics, particularly using Convolutional Neural Networks (CNNs) and Vision Transformers (ViTs), have significantly improved early detection and treatment prediction for oral cancer. By integrating datasets from medical imaging,

< Advances in Electrical and Computer Technologies (https://www.taylorfrancis.com/books/edit/10.1201/9781003515470/advances-electrical-computer-technologies-thangaprakash-sengodan-sanjay-misra-murugappan)

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Chapter

Enhancing security: A deep learning approach for automated weapon detection

By Kunda Suresh Babu (/search?contributorName=Kunda Suresh Babu&contributorRole=author&redirectFromPDP=true&context=ubx), Bachala Pavan Dath (/search?contributorName=Bachala Pavan Dath&contributorRole=author&redirectFromPDP=true&context=ubx), M Mounika Naga Bhavani (/search?contributorName=M Mounika Naga Bhavani&contributorRole=author&redirectFromPDP=true&context=ubx), Munigeti Benjimin Jashva (/search?contributorName=Munigeti Benjimin Jashva&contributorRole=author&redirectFromPDP=true&context=ubx), A Raja Vamsi (/search?contributorName=A Raja Vamsi&contributorRole=author&redirectFromPDP=true&context=ubx), M Venkata Sai (/search?contributorName=M Venkata Sai&contributorRole=author&redirectFromPDP=true&context=ubx)

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ABSTRACT

< Previous Chapter (chapters/edit/10.1201/9781003515470-65/transforming-environmental-protection-tep-esrgan-deep-learning-models-oil-spill-detection-shiva-shankar-gadiraju-mahesh-sowjanya-pushpa-rajeswari-samarendra-narayan-pradhan?context=ubx)
Next Chapter > (chapters/edit/10.1201/9781003515470-67/text-sentiment-analysis-using-machine-learning-deep-learning-models-suruthi-sandhiya-usha?context=ubx)

An Interactive Healthcare Recommendation System Using Big Data Analytics

Publisher: IEEE Cite This PDF

M. Sampath Kumar ; Sai Srinivas Vellela ; G Ramachandra Rao ; Burra Ramanuja Srinivas ; Sravanthi Javvadi ; Thalakola SyamsundaraRao All Authors

Abstract:
Digital innovation and technological disruption are advancing the healthcare sector at an extremely fast rate. The enormous volume of medical services information keeps on mounting consistently, making it harder and truly challenging to track down any type of helpful data. However, in order to mine the data and obtain business intelligence, a comprehensive big data approach is necessary. The ability to identify serious diseases very quickly and provide better medical care to the correct patient at the right time to improve quality of life are only two of the many advantages of big data analytics for the healthcare industry. This paper presents An Interactive Healthcare recommendation System using Big Data Analytics. This system analyzes the results of routine physical examinations to identify health risks and provide users with personalized healthcare services, such as recommendations for exercise and diets. They developed several interactive methods, so users could immediately provide the system with feedback on their vital signs and receive recommendations for improving their health. The prediction model loses accuracy as more MAE is collected. Another observation is that performance improves when a larger number of parties collaborate.

Published in: 2024 3rd International Conference for Advancement in Technology (ICONAT)

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Date Added to IEEE *Xplore*: 10 December 2024

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ISBN Information:

Conference Location: GOA, India

I. Introduction

Due to factors like rising rates of chronic disease, population growth, and the difficulty of processing and extracting useful information from various health-related data sets, evidence-based medicine (EBM) is becoming increasingly popular in the digital era [1]. In 2014, of the [illegible] alf were caused by a Number of chronic conditions, including heart disease[illegible]ension, diabetes, and chronic liver or

A Scrutiny of Machine Learning Methods for the Detection and Identification of Cyber Intrusion

Publisher: IEEE Cite This PDF

Rama Krishna Eluri ; Karunakumar Valicharla ; Modalavalasa Divya ; K.B. Anusha All Authors

Abstract:
This study investigates the interruption identification problem for organization safe havens; the main goal is to classify network behavior as normal or abnormal while minimizing misclassification. In this investigation, two effective information mining techniques are combined to identify network disruption. This methodology makes use of the two computations while avoiding their flaws, combining SVM, Decision Tree, and K Means together for effective information arrangement. This approach is implemented and surveyed using the standard benchmarking KDDCUP99 informational collecting. The experimental findings outperformed the other methods in terms of precision rate and run duration productivity, and this computation is suitable for detecting novel attack kinds.

Published in: 2024 International Conference on Advances in Modern Age Technologies for Health and Engineering Science (AMATHE)

Date of Conference: 16-17 May 2024

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Date Added to IEEE *Xplore*: 12 July 2024

Publisher: IEEE

ISBN Information:

Conference Location: Shivamogga, India

I. Introduction

Throughout the two PCs and connections, information system security has remained a single, solid location. Although various approaches and solutions have been put out to address the problem of security, few are sufficiently acceptable and practical for applications that can be certified. The Intrusion Detection framework protects the system against a variety of malware infections and hacks. Intrusion Detection Systems (IDS) are set up to defend the PCs and associations from a variety of sophisticated hacking attempts and contaminations. An IDS is a component that transmits data to a company station after assessing associated or system workouts for potentially hazardous activity [1]. Using methods for data mining, IDSs gather helpful packaging and portrayal patterns to identify the typical way of acting components of the interference acknowledgment evaluation are as follows: e examination technique to verify the client programming practices; and second, regular and interfering activities should have different ways of acting

Authors

Figures

References

Citations

Keywords

Metrics

Improving Early Detection of Diabetic Retinopathy: A Hybrid Deep Learning Model Focused on Lesion Identification

Publisher: IEEE Cite This PDF

Rarna Krishna Eluri ; Y. Gnaneswar Reddy ; Karunakumar, Valicharla ; K. Divya Prakash ; B. Sudheer All Authors

Abstract:
Diabetic Retinopathy has been found to be the leading cause of sight impairment in most parts of the globe, particularly in diabetic patients. An early detection of DR in retinal images could considerably reduce the chances of blindness. The present paper develops a hybrid deep learning approach using DenseNet, InceptionV3, and ResNet architecture combined with Random Forest Classifier, XGBClassifier, Decision Tree Classifier, and LightGBM Classifier. Preprocessing techniques consisting of green channel extraction, top-hat/bottom-hat transformations and data augmentation are used. The comparison of the model performance metrics such as precision, recall, F1 score, and AUC are done. It can be seen that the hybrid model has a strong difference in classifying different stages of DR. Comparison of a number of models is also made that comes up with the best model. Even more remains for the near future: improve sensitivity of the model and extend this approach to larger datasets.

Published in: 2024 First International Conference on Innovations in Communications, Electrical and Computer Engineering (ICICEC)

Date of Conference: 24-25 October 2024
DOI: 10.1109/ICICEC62498.2024.10808807
Date Added to IEEE *Xplore*: 30 December 2024
Publisher: IEEE
ISBN Information:
Conference Location: Davangere, India

I. Introduction

Diabetic retinopathy is due to diabetes mellitus and implies damage to the blood vessels of the retina. And thus, if not detected and treated early, it can cause total, and potentially permanent loss of vision. On the fundus images of patients with DR, microaneurysms, hem as early signs of the disease. Manual detection of DR by ophthalmologists is cru including subjectivity and the

Authors
Figures
References
Citations
Keywords
Metrics

Deep Learning Solutions for Soybean Leaf Infestation: A VGG19-Based Approach

Publisher: IEEE Cite This PDF

Chalicheema Rajani ; Dasari Triveni ; Borugadda Supriya ; Polimera BhagyaLakshmi ; Valicharla KarunaKumar All Authors

Abstract:
After all, soybean crops are an essential constituent in world agriculture. These plants generally become easy prey to attacks by pests like Diabrotica speciosa and caterpillars. The early detection of these attacks is pretty significant in reducing the damage from an economic point of view as well as an ecological one. This present study has been motivated by the above facts, proposing a newer deep learning-based solution using a transfer-learning approach with VGG19 CNN for efficient classification of soybean leaf images. In this work, we adopt the pre-trained VGG19 architecture for detecting pests infestation in soybean leaves and perform fine-tuning specific to the problem. In this work, employing transfer learning from VGG19 means utilizing the deep features learned from large-scale image datasets for adaptation in the specialized context of agricultural pest detection. This approach not only improves the model's accuracy but also reduces the dependency on huge amounts of training data, which is usually a bottleneck in agricultural applications. We test the performance of our model on a very challenging dataset of soybean leaf images, which yields a balanced accuracy of 99.5% on previously unseen test data.The contribution of this work can be both theoretical and practical. Theoretically, the study advances deep learning applications in plant pathology, showing how effective transfer learning will be in a new domain. In practice, our model is a potent tool for early detection of pest infestations that permits interventions in time and avoids huge economic and environmental losses.

Published in: 2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)

Date of Conference: 06-08 March 2025
DOI: 10.1109/IATMSI64286.2025.10985548
Date Added to IEEE *Xplore*: 09 May 2025
Publisher: IEEE
ISBN Information:
Conference Location: Gwalior, India

I. Introduction

Indeed, agricultural productivity is the backbone to both global food security and economic prosperity yet simultaneously, it always faces this one constant, yet increasingly oppressive threat from plant diseases as well as pest infestations that are no mere minor irritation; however, they constitute a serious global threat. Plant pathogens and pests account for an estimated annual loss of 14% of crop yields around the globe [1]. The effects are massive economic setbacks that trickle down to farmers, the agricultural industry, and even the environment, all through the excessive usage of treatment measures [2]. The reason, therefore, calls for the formulating of innovative strategies meant at reducing the [redacted] overdue issue, traditional methods of pest control are in essence chemical pesti[redacted]e effective in some ways, they are very expensive and pose severe health hazards to humans and to the environment as well. This therefore

Enhanced Multi-Class Classification of Kidney Abnormalities Using VGG16 and Advanced CT Image Analysis Techniques

Publisher: IEEE Cite This PDF

Vijay Kumar Nukala ; Mahesh Kavali ; Jagadeesh Dasari ; Srikanth Nuthalapati ; Karuna Kumar Valicharla ; Sireesha Moturi All Authors

Abstract:
This paper answers a critical need for the sensitivity and specificity of the detection of abnormalities in the kidneys that have been emerging as a global health challenge. This is done by using the development of artificial intelligence in classifying images of CT scans into one of four categories: cyst, stone, tumor, or normal, by using the deep learning model VGGI6. A total of 12,446 CT images, balanced by class weights due to dataset imbalances, were used. In kidney anomaly detection, the accuracy obtained using the VGG16 model was 86.56%, precision was 87.24%, recall was 79.46%, specificity was 94.16% and FI score was 78.97 %. Image preprocessing included resizing, conversion to grayscale, and histogram equalization to increase the visibility of features, while data augmentation ensured generalization in models. This work presents important developments in the automation of the diagnosis of renal disease and contributes to improvements in medical imaging technology and health outcomes.

Published in: 2024 2nd International Conference on Signal Processing, Communication, Power and Embedded System (SCOPES)

Date of Conference: 19-21 December 2024

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Date Added to IEEE *Xplore*: 16 May 2025

Publisher: IEEE

ISBN Information:

Conference Location: Paralakhemundi Campus, Centurion University of Technology and Management, Odisha., India

I. Introduction

Kidney disorders that include nephrolithiasis, cysts, and re-nal cell carcinoma affect more than 10% of the world's population. In 2040, the World Health Organization will predict death to be the 6th leading cause. Kidney cancer was the 6th most common cancer for men in the U.S. in 2020, with an estimated 79,000 cases. These conditions seriously compromise kidney function, especially in individuals with a family history or recurrent kidney stones and are exacerbated by factors such as fluid de[illegible]eases such as stones, which affect [illegible] of the world's population, and renal cell carcinoma, which is the most common form of kidney cancer. These

Challenges in Information, Communication and Computing Technology – V. Sharmila et al. (Eds)

An efficient method of diabetes prediction using machine learning

S. Siva Nageswara Rao, Ch. Padma, V. Mahesh Babu & Y. Chandana
Narasaraopeta Engineering College, Narasaraopet, Guntur, Andhra Pradesh, India

ABSTRACT: Diabetes is a common chronic condition, and current prediction methods generally perform poorly. This article proposed a machine. A learning-based method to diabetes prediction enables early detection. Three supervised machine learning techniques are chosen for this project: Random Forest (RF), Linear Support Vector Machine (LSVM) and K-Nearest Neighbors (KNN). We use the PIMA Indian Diabetes dataset by using the UCI repository to measure the accuracy of each technique and area under the curve (AUC). Random Forest surpasses other algorithms in predicting diabetes risk, with an AUC of 94.02% and accuracy of 83.67%. This contribution is important for healthcare workers since it can help predict diseases early and treat them promptly.

Keywords: Diabetes Diagnosis, Random Forest, Linear SVM, KNN

1 INTRODUCTION

Diabetes is a metabolic illness defined by higher blood sugar levels caused due to either inadequate insulin secretion or resistance [1], which prevents proper sugar metabolism. It affects persons of all ages and classified into three different types: Type-1 (IDDM), Type-2 (NIDDM) and type-3 is Diabetes during pregnancy. Early diabetes detection is essential to stop the disease from progressing to more serious stages. The detection of diseases has been greatly aided by latest progress in machine learning, data science, and artificial Intelligence (AI), which have been completely changed the healthcare industry. The technique begins with dataset preparation, followed by data pre-processing activities such as managing missing values, outlier elimination, and normalization. Several tools will be used in the feature selection process. Lastly, an evaluation of the classifiers' performance will be conducted both prior to and following feature selection.

2 LITERATURE SURVEY

The guided study on diabetes prediction using various machine learning (ML) techniques, aiming to improve accuracy by integrating external factors. Their research evaluated machine learning models' performance through K-Fold validation, revealing varying accuracy levels across algorithms [5]. Through rigorous analysis, the study identified top-performing ML algorithms for prediction of diabetes, highlighting the significance of incorporating external factors for enhanced predictive accuracy. [6] Focused on predicting Type-I, Type-II, and Type-III diabetes, using Logistic Regression (LogReg) and Decision Trees (DT) algorithms. LogReg achieved an 82% accuracy on a dataset contains the elements like lifestyle, health, and family background attributes. [7] And Smit Vora analyzed human body attributes to predict diabetes, utilizing KNN, DT, LogReg, & NB classifiers. Their study reported a maximum accuracy of 79%. [9] Researched on trained and tested classifiers like Logistic Regression, SVM, Decision Tree and others on diabetes data.

DOI: 10.1201/9781003559085-69

DESIGN OF LOW POWER HIGH SPEED CMOS D FLIP-FLOP USING HYBRID LOW POWER TECHNIQUES

Prof. V. Venkata Rao[1], P. Deepika[2], P. Lakshmi Prasanna[3], T. Uday Kumar[4], P. Karthik[5], D. Naga Rohini[6]

Department of Electronics and Communication Engineering
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Student[2-6] Narasaraopeta Engineering College, Narasaraopet, A.P, India

ABSTRACT:

The primary goal of this research is to balance low power consumption and high speed performance by designing a low power and high speed CMOS D flip-flop employing hybrid low power approaches. When implementing various types of binary counters, shift registers, and analogue and digital circuit systems, CMOS D flip flops are the preferred choice. Leakage power is the primary significance in CMOS technology. Lowering the supply voltage to the designated circuit in standby mode will lessen power consumption and extend the battery backup time. The CMOS D flip flop circuit uses the SVL approach to suppress signals and lower power dissipation caused by leakage currents in reserve form. Additionally, the suggested design employs fewer clocked transistors, which lowers leakage current and dynamic power consumption to an accessible level. The Cadence Virtuoso tool at 45 nm technology is used to replicate every existing design as well as every proposed design.

Keywords: CMOS, D-Flip Flop, Leakage Power, Le Power Consumption, Power- Delay Product (PDP), Cadence tool.

I. INTRODUCTION

The power consumption is the major issue in designing the integrated circuits. Large power dissipation affects the performance and the reliability. The one more reason for reducing the power dissipation is to increase the battery lifetime. Reduction in power dissipation of it has significant impact on the speed and overall power consumption. Flip-flops are the basic storage elements used in synchronous digital VLSI circuits and in other digital electronic circuits. Bi-stable devices (popularly called Flip-flops) are mostly utilized as solitary bit memory cells.

Flip flop have each of two steady condition, logic 1 or logic 0. We need to trigger the flip flop to get in to any one of two stable states by applying an external pulse as input. The output remains which steady condition until other pulse is utilized to modify to conditions. We can also modify the flip flop output by applying proper inputs other than trigger.

Flip flops are widely used in most sequential circuits like counters, shift registers etc...Delay flip flop stores whatever the input bit pattern applied at its D input. This feature helps in processing of data bit by bit by other parts of the digital circuit to get solutions for complex functions. The major drawback of the Set Reset flip flop (i.e. its undeterminable output and if S=R=1) is conquer through the D flip-flop.

D flip-flop, is also known as Data flip-flop since its capability to 'latch' and store data, or Delay flip-flop because latching and accumulate data is utilize to make a impediment in the processing of that data through a circuit. Currently, power consumption of VLSI chips is becoming an increasingly critical problem as modern VLSI circuits continue to grow, and technologies evolve. In portable systems, very low power consumption is desired to increase battery life. Accordingly, for any digital circuit design, power consumption must be taken into account very seriously.

To reduce the complexity of circuit design, a large proportion of digital circuits are synchronous circuits; that is, they operate based on a clock signal. Among the more popular synchronousdigital circuits are D-type flip-flops. The total clock related power consumption in synchronous VLSI circuits can be divided into three major factors: power consumption in the clock network, power consumption in the clock buffers, and power consumption in the D-type flip-flops [5]. It is worth noting that the frequency at which synchronous devices can operate has been limited by clock skew. The greater the frequency of the clock, the smaller the clock skew must be kept maintaining synchronization of the device. It has been observed that clock skew decreases as capacitance on the clock is decreased. Thus, reducing capacitance on the clock line may allow synchronous circuits to operate at higher clock frequencies. Therefore, the improvement of such flip-flops circuits a decreasing in power consumption, without impairingother characteristics, is of prime importance to the VLSI industry. Though several contributions have been made line to the art of DFFs, a need evidently occurs for a design that still further improves the relative power consumption of DFFs.

DESIGN AN AREA EFFICIENT KOGGE STONE ADDER USING PASS TRANSISTOR LOGIC

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ABSTRACT:

This Paper represents the development of an area-efficient KOGGE Stone adder utilizing pass transistor logic. Here we use cadence software with 45nm technology. In recent technologies of Electronics applications, Adder is an important source of any devices such as DSP, and VLSI applications. Adders are fundamental components in digital circuits. Adder circuits are relatively simple to design and implement, making them cost-effective and efficient. For which, many electronics application devices used the high speed and low power consumption adders namely Parallel Prefix Adder (PPA). The speed and performance of these systems depend largely on the efficiency and accuracy of the adders. Generally, PP Adders have less delay due to less waiting time of carry for the next addition. But the area consumption is more, in which the performance of the adders will decrease for higher-order bits addition and many transistors required for the prefix network. One way to reduce the area of a KSA is to use Pass Transistor Logic (PTL) instead of conventional CMOS logic. The proposed area efficient KSA design used the Pass Transistor Logic (PTL) and analysed the performance of particular design. The Performance results of PTL with PP-KSA design used the reduce number of MOS devices which yields less area consumption compared to basic design of 4-bit PP-KSA.

Keywords: Pass transistor logic, KOGGE stone adder, Area consumption, Very Large-scale integrated design, Parallel prefix adders, Micro-wind.

I. INTRODUCTION

A KOGGE Stone Adder (KSA) is a kind of parallel prefix adder that generates and propagates the carry bits in parallel, enabling quick binary addition. However, because a KSA's prefix network requires a lot of transistors, it consumes a lot of space. By substituting Pass Transistor Logic (PTL) for traditional CMOS logic, a KSA's size can be decreased. Transistors are switches used in PTL logic design to achieve Boolean functionalities. Less size, less delay, and lower power dissipation are among the benefits that PTL offers over CMOS. To create the KSA architecture, we employ a combination of both and or gates together with AND gates, OR gates, XOR gates, and half adders. Using pass transistor logic in a modified KSA. We constructed gates (pass transistor and gate, or gate, half adder, XOR gates) by utilizing pass transistors.

A thorough analysis of adder architectures and pass transistor logic concepts is done at the outset of the project. The design process for the KOGGE Stone adder is then covered, with an emphasis on reducing the number of transistors while keeping performance parameters like delay and power consumption. Before we discuss the design of KSA using PTL, let us first review the design of KSA using CMOS, which is the conventional logic design style. CMOS is a logic design style that uses complementary pull-up and pull-down networks of PMOS and NMOS transistors to realize Boolean functions. CMOS has some advantages, such as full-swing output, noise immunity, and zero static power dissipation. However, CMOS also has some disadvantages, such as high area, high power consumption, and high delay. To get around this, we construct the KSA using Pass Transistor Logic (PTL) rather than traditional CMOS logic. In PTL logic design, transistors are used as switches instead of complementary pull-up and pull-down networks to realize Boolean functions. PTL is superior to CMOS in a few ways, including less space, and reduced power dissipation. Static power dissipation, charge sharing, and threshold loss are some of the difficulties PTL faces. To get over these problems and outperform CMOS, PTL must be properly designed and optimized.

The KOGGE Stone adder, characterized by its recursive structure and efficient carry lookahead mechanism, provides a solid foundation for high-speed addition. Integrating pass transistor logic into this architecture introduces the potential for a compact and power-efficient design. The choice of AND gates, XOR gates, OR gates, HALF ADDER circuits, and combinations thereof, as the basic building blocks, enables us to capitalize on the benefits of pass transistor logic while preserving the inherent advantages of the KOGGE Stone adder. In this context, the KOGGE Stone adder has emerged as a noteworthy architecture, offering parallelism and efficient carry propagation. This project seeks to enhance the area efficiency

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Iot-Based Leaf Disease Identification And Detection Uing Successive Method For Feature Extraction

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[3],[4]Department of ECE, Aditya Institute of Technology and Management, Tekkali, Andhra Pradesh, India.

Abstract

Developing a prototype system to identify paddy diseases, such as bacterial leaf spot, sectorial leaf spot, target spot, and leaf mold disease, is the primary goal of this project. This research focuses on the use of neural networks to classify paddy disease and image processing techniques to improve image quality. The technique includes gathering images, segmenting and pre-processing them, then analyzing and categorizing the paddy illness. The K-means clustering approach is utilized to segment images, and characteristics are generated from the cluster impacted by the disease. Extracted are characteristics including contrast, homogeneity, correlation, energy, mean, variance, and standard deviation. To classify the disease, the extracted features from disease cluster have been given as classifier inputs.

Keywords: Contrast, Homogeneity, Correlation, Energy, Variance, Mean, Standard Deviation, Leaf Disease, Neural networks, conventional neural networks

1. Introduction

Getting additional value-added products is essentially dependent on a functioning product quality control system. Numerous studies demonstrate that a variety of factors can lower the quality of agricultural products. Plant diseases are among the most significant contributors to this kind of quality. As a result, reducing plant diseases enables significantly raising product quality. One of the most extensively used food plants, rice is also known by its particular name, Oryza Sativa, and it was first cultivated in Asia. More over half of the world's population depends on rice as a food source, making it important crop globally. A basic diet for several people worldwide, including Malaysians, is rice. Nonetheless, a number of reasons contribute to the slowdown and decreased productivity of paddy rice production. The paddy illness is one of the primary causes. A disease is an aberrant state that harms a plant or causes it to perform improperly. Symptoms are a simple way to identify diseases. There are numerous varieties of paddy diseases, including brown spot disease, red disease virus, and Bakanae. Technologies like computer vision and image processing are particularly helpful to the agriculture sector. They have greater promise and significance for a variety of agricultural technology fields. One of the most helpful systems is the Paddy Disease Detection System. It can aid in the paddy farmer's quicker illness detection. The aim of this project is to create a prototype system that uses image processing techniques in addition to or instead of the manual method to automatically identify and categorize paddy diseases. India is a rapidly developing nation, and its early development was mostly dependent on agriculture. The principles of globalization and industrialization are posing challenges to the field. Furthermore, the younger generation needs to be made aware of the importance of cultivation and its necessity. Although technology is essential in every area these days, agriculture still employs some antiquated practices. Erroneous plant disease identification results in significant losses in terms of production, time, cost, and product quality. Determining the state of the plant is crucial to its proper cultivation. Identification used to be done manually by skilled individuals, but with so many environmental changes, prediction is getting harder. Thus, we may identify plant diseases using image processing techniques.

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An Effective and Safe Method for Digital Image Watermarking That Uses RDWT Algorithms with SVD and Firefly

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Abstract : Digital watermarking is the process of concealing digital copyright information in digital content, to enable copyright protection and stop unauthorized distribution. The process of undetectable digital data embedding in the host audio stream is known as digital audio watermarking. One of the best approaches for embedding a picture into another image is image watermarking. Despite the fact that there are several methods available for watermarking SVD, Firefly is the most effective method for achieving the greatest outcomes. Watermarking is generated by SVD, and firefly aids in both encryption and watermarking. The most effective method for creating safe watermarks is to combine cryptography and watermarking. While there are several scaling factors that can be applied to fireflies, multiple scaling factors are used in this study. This study measures the Structure Similarity Index Measure (SSIM). Furthermore, the watermarked image undergoes standard processing methods such as sharpening and smoothing, and is subsequently encrypted using Firefly.

Keywords: Water marking, DWT, SVD, SSIM

I. Introduction

The internet is now widely utilized worldwide. Given how easy the data may be copied, communication of the data must be secure. This paper uses firefly algorithms and SVD to prevent plagiarism. These algorithms can implement this copyright with ease. There are numerous techniques and methods available for watermarking and encryption, but the ideal method should be precisely extracted and decrypted again. Although watermarking and related articles were first introduced in 1979, this field of study only began to receive significant attention in 1990. Although there are many benefits to data digitalization for consumers worldwide, it is quite easy for digital data to be altered and lose its authenticity [1].

The water marking technology is employed to safeguard copyright. The phrase "watermarking" refers to the common practice of leaving a visible watermark on paper. It was applied to the forgery of banknotes and books. Watermarking is a technique used to transmit hidden information and change the substance of a text by switching around the alphabet's places. Watermarking first appeared in use as a money anti-counterfeiting tool in the eighteenth century, and it was also applied to other papers. This method preserves security by converting the original image to a watermarked version. Every watermarking technique must be applied in order to obtain a watermarked image [2], [3]. Water marking techniques can be used under certain guidelines, and these guidelines can be altered based on the needs of various applications, including security, robustness, and imperceptibility.

Imperceptibility: Imperceptibility is the capacity to distinguish between an image that has been watermarked and the original image. The user has no control over the audio or picture in this.

Robustness: The watermark cannot be removed, even if the computational theory underlying it is understood. This implies that the watermark is able to be eliminated by someone with greater expertise in the embedding process.

Security: The watermark needs to be resilient to assaults that try to expose the contained data directly. Without the secret key or password, no one can alter, conceal, decode, or erase the watermark.

IoT Based Smart Bin Design and Implementation for an Effective Waste Management System

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[2] M.Renu Babu, *Associate Professor Dept. of ECE, TKR Engineering College,Hyderabad,India.*

***Abstract*—Environment is essential for everyone and present everywhere,thatsupplyallnaturalneedsinanabundantmanner but also we have some responsibilities towards our environment. In several urban areas although the dustbins are provided sothat it can be used by the people but its proper maintenance is also needed lacking of which in hygeine increases destroying our environment day by day also resulting severe adverse effects for mankind. This paper presents some revolutionary remedies in this context. People are more interested to use such technologies which can reduce their time and effort in efficient manner. Automation is the most demandable feature now a day. For this purpose, smart dustbins are the much suitable approach. It will be helpful to develop green and smart city. [1]. For this we have to develop a fully automatic dustbin which will first be able to detectthecurrentstatusandconnectedtolocalareanetworkand servers by sending the data to computer system about its current status.-Everywherepeopleareinvestigatingondifferentaspects in several fields for making smart cities to enhance civilization and human comfort. This paper presents some basic ideas on smart dustbin which can be helpful to reduce human effort to makewastemanagementmoreefficient.Itwillsensethatdustbin is full or empty and will instruct to dump the garbage by for sending messages by Gsm and arduino module**

Index Terms—Loadcell, IOT, load sensing plate, Arduino, Wi-Fi, Internet.

I. INTRODUCTION

Embedded System is a combination of computer hardware and software, and perhaps An additional mechanical or other parts,designedtoperformaspecificfunction.Agoodexample is the microwave oven. Almost every household has one, and tens of millions of them are used everyday, but very few people realize that a processor and software are involved inthe preparation of their lunch or dinner. This is in direct contrast to the personal computer in the family room. It too is comprisedofcomputerhardwareandsoftwareandmechanical components (disk drives, for example). However, a personal computerisnotdesignedtoperformaspecificfunctionrather; it is able to do many different things. Many people use the termgeneral-purposecomputertomakethisdistinctionclear. As shipped, a general-purpose computer is a blank slate; the manufacturer does not know what the customer will do wishit. One customer may use it for a network file server another mayuseitexclusivelyforplayinggames,andathirdmay use it to write the next great American novel. Frequently, an embedded system is a component within some larger system. For example, modern cars and trucks contain many embedded systems. One embedded system controls the anti-lockbrakes, other monitors and controls the vehicle's emissions, andathird displays information on the dashboard. In somecases, these embeddedsystemsareconnectedbysomesortofacommunica-tionnetwork,butthatiscertainlynotarequire-ment.Thesolid waste is increasing in urban and rural areasas the populationis increasing and waste management hasbecome a global concern. In order to manage this overflowinggarbage we need to take right decision. Mainly there arethreetypes of sources where garbage is generated viz. residential, commercial and industrial. The garbage produced intheresi-dential area can be collected directly fromhome or bymakingan arrangement for mass collection in that area andcanbelifted using vehicles. In case of restaurants, malls andothercommercial establishment garbage can be collecteddirectlyfrom the unit using vehicles. Industrial garbage whichincludeswaste produced in construc-tionsites,variousindustriescanalsobedisposedusingdifferent ways.Foreffectivehandlingofthesewasteslikecollectionand disposal, Internet of Things(IoT) concept is being used, which mainly deals withsensing, actuating, data gathering, storing and processing by connectingphysical and virtual devices to the Internet. This systemisa very innovative system whichwill help to keepthecitiesclean . In our daily life, we see the pictures of garbagebinsbeing overfull and all the garbage out resultinginpollution.Thisalsoincreasethenumberofdiseases aslargenumberofinsectsandmosquitoesbreedonit.Toavoid all suchsituationswe are going to implement a project called SMARTWASTEMANAGEMENTSYSTEMusingInternetof Things.Itwillhelpincollectingthegarbagefromaparticular

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Brain Tumor Detection through Image Fusion Using Cross Guided Filter and Convolutional Neural Network

Srikanth M.V.[1], Sivalal Kethavath[2], Srinivas Yerram[3], SivaNagiReddy Kalli[4], Nagasirisha.B[5] and Jatothu Brahmaiah Naik[6]

ABSTRACT

This Data fusion has become a significant issue in diagnostic imaging, particularly in medical applications like radiation and guided image surgery. Medical image fusion aims to enhance the precision of tumor diagnosis, by preserving the salient information and characteristics of the original images in the fused image. It has been shown that guided filters are capable of maintaining edges well. In this paper, we propose a novel cross-guided filter-based fusion approach for multimodal medical images utilizing convolutional neural networks. The cross-guided filter is used in the proposed algorithm to extract the detailed features from the source images. Convolutional neural networks are used to generate the feature weights of source images derived from the detail layers. The weighted average rule is used to merge the source images based on these weights. We used thirty distinct types of medical images from diverse sources to compare the effectiveness of the proposed strategy to that of existing methods, both numerically and visually. The experimental findings demonstrated that, in terms of both objective evaluation and qualitative image quality, the suggested system performs better than other standard methods already in use. The quantitative results show that compared to existing methods under consideration for comparison, the proposed algorithm improves mutual information by 25%, image entropy by 9.5%, spatial frequency by 21%, standard deviation by 18.1%, structural similarity index by 30%, and edge strength of the fused image by 39%.

Article information:

Keywords: Medical Image Fusion, Cross-guided Filter, Convolutional Neural Networks, Mutual Information, Image Entropy, Spatial Frequency, Standard Deviation, Structural Similarity Index, Edge Strength

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1. INTRODUCTION

Medical imaging is essential to many patients' medical experiences and provides a solid foundation for clinical decision-making. Many clinical applications, including computer-assisted detection, therapy, action planning, diagnosis, and planning, can benefit from medical imaging. While medical imaging systems play a significant role in many clinical tasks, there is an increasing need for trustworthy automated ways to assist healthcare personnel in interpreting complex medical pictures. For the purpose of interpreting structured data, such images, medical imaging research thus benefits from the development of advanced computer tools [1,2]. New technologies for capturing, processing, and interpreting images are driving innovation, particularly in the fields of registration, segmentation, reconstruction, fusion, detection, modeling, and tracking. Understanding medical imagery ultimately requires prior knowledge and might be challenging at times. Biomedical pictures can have noise and a variety of modality-specific artifacts depending on the techniques and settings used during acquisition. The topic of healthcare image

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Enhanced Rainfall Prediction: Leveraging Ensembling Models for Maximum Forecasting Performance

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Abstract—Rainfall prediction is a critical task with implications for agriculture, water resource management, and disaster preparedness. Traditional methods often struggle to capture the complex nonlinear relationships inherent in meteorological data. Rainfall prediction is an important task with far-reaching consequences for agriculture, water resource management, and disaster preparedness. Traditional approaches frequently fail to correctly capture the complex and dynamic character of meteorological data. In recent years, machine learning (ML) techniques, particularly ensemble models, have showed promise for improving the accuracy and reliability of rainfall forecast. This paper provides a novel approach to rainfall prediction based on an ensemble of machine learning models. The ensemble model EERP algorithm combines the predictions of numerous base learners to create a more reliable and accurate forecast. The ensemble uses a variety of machine learning techniques as base classifier's, such as decision trees, Naive bayes were used and compared with the effectiveness of proposed approach in which the proposed classifier gave the best accuracy when compared with the other two i.e., 96%

Index Terms—Rainfall, ML, Ensembled Model, Forecasting, Water Resource management.

I. Introduction

Rainfall prediction is a crucial part of weather forecasting, with applications in agriculture, water resource management, disaster preparedness, and urban planning. Meteorologists and climatologists can assist communities in making informed decisions to reduce dangers and maximize possibilities by forecasting when and where precipitation will fall. Rainfall is predicted by evaluating numerous atmospheric elements such as temperature, humidity, air pressure, wind patterns, and cloud forms. Geographic characteristics like mountains and beaches, as well as climate patterns like El Niño and La Niña, all play a role in the complicated interactions between these components. Meteorologists use a wide range of instruments and techniques to forecast rainfall, including numerical weather prediction models, satellite images, radar data, and statistical methodologies. Forecasters can use these strategies to provide short-term forecasts for urgent planning as well as longer-term outlooks for seasonal and climate predictions. While advances in technology and scientific understanding have increased the accuracy of rainfall forecasts, predicting precipitation remains difficult due to the atmosphere's intrinsic variability and complexity. As a result, forecasters frequently provide probabilistic forecasts that indicate the likelihood of various rainfall scenarios, allowing decision-makers to better manage risks and resources. Machine learning techniques rely on algorithms that allow computers to learn from data and make predictions or judgments without explicit programming. In the context of rainfall prediction, machine learning algorithms may examine historical meteorological data to uncover patterns and correlations between various atmospheric factors and rainfall events. These algorithms can learn complicated patterns and connections that older approaches may miss by training on massive datasets of previous weather observations.ML techniques to rainfall prediction provide various benefits:

Improved Accuracy: Machine learning models can capture complex interactions between atmospheric variables and rainfall patterns, perhaps resulting in more accurate predictions than older methods.

Flexibility: Machine learning algorithms are adaptive and may use a variety of data sources, such as satellite imagery, radar data, and climate model outputs, to improve prediction skills.

Real-time Forecasting: ML models can process massive

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An Efficient Architecture for Signed Carry Save Multiplication

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A TRACT:

The performance of a digital signal processing (DSP) system is greatly affected by the performance of its multiplication operations. Simultaneous improvement in performance metrics such as delay, power, area, and energy efficiency is difficult to achieve and is a challenge to be addressed. To this end, an efficient carry save multiplier CSM) that employs modified square root carry select adder MSCA) for the vector-merging addition and improved full dder (IFA) in place of conventional full adder is proposed. Among 16 x 16 multipliers, the critical path delay (CPD), ower, area, power delay product (PDP), and area delay roduct (ADP) of the proposed CSM are improved by 27.74, 9.4, 46.2, 41.4, and 60.87 percent respectively in comparison with improved booth multiplier and by 46.43, 31.46, 36.9, 63.05, and 65.96 percent respectively in comparison with low PDP booth multiplier. Cadence re with gpdk 45 nm standard cell library is used for esign and implementation.

ndex Terms-tool. Computer arithmetic, low-power design, rocessors, VLSI system.

. INTRODUCTION

REAL time digital signal processing (DSP) architectures require a low complex, delay and energy efficient multiplier n order to meet high speed processing of input data. Various multiplication schemes have been proposed over the years. A adix-4 8x8 bit multiplier using improved binary to two's omplement converter (BTC) is introduced. The mprovement in delay through the use of improved BTC was gated by the serial processing of data through the stages. A onventional carry save multiplier (CSM) has a simple and egular structure. In a CSM, the carry bits are not

operation, the delay performance is affected by the final vector-merging adder. A delay and energy efficient modular hybrid adder is discussed in [7]. An efficient CSM that uses high speed and energy efficient MSCA [8] for vector merging addition and improved full adder in place of conventional one is proposed here.

An unsigned 4 x 4 CSM consists of 3 rows of half and full adders for the addition of partial products and a vector In order to meet high speed input data processing, real-time Digital Signal Processing (DSP) architecture ne- cessitates a less complex, delay-free and energy- efficient multiplier. In any computing unit, multiplication is one of the most fundamental arithmetic operations, but it neces-sitates more hardware. Because digital signal processing requires a large number of filtrations, convolutions and otheroperations, the multiplier is an essential component. As a result, the multiplier's performance limits the performance of digital signal processing systems.

Extensive research hasbeen done to improve the multiplier's speed and reduce its power consumption. The technique used to add the partial products has a big impact on the multiplier's performance. The main area of research in VLSI system design is area and power reduction in data path logic systems. High performance processors and systems have always required high – speed addition and multiplication. The basic block inmultiplier is adder. High speed multipliers depends heavily on the efficient design of the adder. The structure of atraditional carry save multiplier (CSM) is straightforward and consistent. The carry bits in a CSM are saved to pass diagonally downwards rather than being immediately added. While the carry save operation improves speed, the final vectormerging operation has an impact on delay performance. Various addition schemes like Carry Select Adder have been proposed over the years [1]. Comparison of delay between different adders were carried out in [2]. Multipliers are made efficient by improving the final addition [3].

Optimizing the Powerhouse: Fine-Tuning CNNs for Superior Lung Disorder Detection

Publisher: IEEE Cite This PDF

Rama Krishna Eluri ; Pentyala Tanuja ; M. Venkat Rao ; Vutla Lavanya ; M. Mokshagna **All Authors**

Abstract:
Present work involves the use of deep learning models, in particular, Convolutional Neural Networks, to detect diseases of the lungs such as pneumonia, tuberculosis, and lung cancer through the analysis of chest X-ray a scan images. CNN has emerged as a robust tool for the analysis of medical images due to their natural ability automatically extract hierarchical features, hence making them ideal for complicated tasks such as disease de Well-known architectures in this work are VGG16 and VGG19; they are combined with specially designed seq and functional models to solve this task of recognizing those diseases. These models are trained on open-sou that will provide the model with real-world medical images for it to learn from diverse cases of lung abnormaliti important enhancement in pursuit of model performance and robustness in this work is the employment of augmentation techniques. Since, in most cases, labeled medical data comes in a limited amount, augmentatio important way of artificially increasing the effective size of the training set to allow the models to generalize be unseen data. The images were rescaled, shear transformed, and flipped horizontally to simulate different orier and variations that can arise during real-world X-ray and CT scans. This will also make the models less sensiti changes in orientation, scale, or noise of an image and enhance their capability of detecting diseases more pr different datasets. The results of the study show that early detection by deep learning models has improved a incorporating advanced CNN architectures and augmentation strategies. Those customized sequential and fur models performed very well, especially in the classification of lung diseases with very high precision. This is in important for early diagnosis because early identification of diseases like pneumonia, tuberculosis, and lung ca lead to better tre...

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A Scrutiny of Machine Learning Methods for the Detection and Identification o Cyber Intrusion

Publisher: IEEE Cite This PDF

Rama Krishna Eluri ; Karunakumar Valicharla ; Modalavalasa Divya ; K.B. Anusha All Authors

Abstract:
This study investigates the interruption identification problem for organization safe havens; the main goal is to network behavior as normal or abnormal while minimizing misclassification. In this investigation, two effective information mining techniques are combined to identify network disruption. This methodology makes use of the computations while avoiding their flaws, combining SVM, Decision Tree, and K Means together for effective inf arrangement. This approach is implemented and surveyed using the standard benchmarking KDDCUP99 infor collecting. The experimental findings outperformed the other methods in terms of precision rate and run duratio productivity, and this computation is suitable for detecting novel attack kinds.

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Improving Early Detection of Diabetic Retinopathy: A Hybrid Deep Learning Model Focused on Lesion Identification

Publisher: IEEE Cite This PDF

Rama Krishna Eluri ; Y. Gnaneswar Reddy ; Karunakumar. Valicharla ; K. Divya Prakash ; B. Sudheer **All Authors**

Abstract:
Diabetic Retinopathy has been found to be the leading cause of sight impairment in most parts of the globe, particularly in diabetic patients. An early detection of DR in retinal images could considerably reduce the chances of blindness. The present paper develops a hybrid deep learning approach using DenseNet, InceptionV3, and ResNet architecture combined with Random Forest Classifier, XGBClassifier, Decision Tree Classifier, and LightGBM Classifier. Preprocessing techniques consisting of green channel extraction, top-hat/bottom-hat transformations and data augmentation are used. The comparison of the model performance metrics such as precision, recall, F1 score, and AUC are done. It can be seen that the hybrid model has a strong difference in classifying different stages of DR. Comparison of a number of models is also made that comes up with the best model. Even more remains for the near future: improve sensitivity of the model and extend this approach to larger datasets.

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Unveiling Student Success: A Multifaceted Approach with Learning Coefficients and Beyond

Publisher: IEEE Cite This PDF

Nukala Vijaya Kumar ; Shaik Rafi ; Tumpala Mahith ; D. Venkata Reddy ; Kethavath Ravi Naik ; Kolakani Raju **All Authors**

Abstract:
The student performance is examined in this study using a number of methods of Educational Data Mining (EDM), Clustering and classification techniques are employed to classify the course as well as the performance in the entrance examination. The results obtained show that the Random Forest and XG Boost which are machine learning models outperform traditional methods for predicting student success. Moreover, CNN and LSTM Networks, which are deep learning models, improve prediction accuracy even further. Conducted through metrics like accuracy, precision, recall and FI-score, this study shows that any form of recognition of the pattern, in this case, the early one, helps to reduce failure rates to considerable extents. The results of this study suggest that there is a potential scope for further improving prediction algorithms and management of educational resources, which are of great relevance to the institutions‘to further the student success.

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I. Introduction

Education, which is a necessary societal element, is heavily influential on various aspects of life. The integration of information and communication technologies has changed many fields of study including education. COVID-19 pandemic for instance has forced several countries to adopt e-Learning environments much faster than they would have done in normal circumstances [1]–[3]. Higher education institutions consider the academic achievement of students as one of the main indicators for the quality of service they offer. However, it might be difficult to identify what are the key elements that influence a student's performance during their early years at school. In response to issues concerning academic performance, many useful instruments have been developed but these tools are often not applicable elsewhere in education contexts [3]. Despite advances in predicting students' outcomes, there are still gaps in data-based analysis and augmentation of student results using technology across all areas. Consequently, EDM has the potential to improve education institutions whole student experience as well as teaching/learning [1]. Because academic achievement is strongly correlated with desired outcomes, it is extremely important. Academic achievement among college or university students still remains a critical indicator of institutional success. Student's academic p[illegible] predicted using variables such as basic courses and non-academic performance and name of university. This study uses consequences from assignments, final examinations and primary-degree finite score [2]. This research provides a significant advan[illegible]

Authors

Conference Paper

Chronic Kidney Disease Prediction Using Machine Learning and Deep Learning Models

March 2025

DOI:10.1109/IATMSI64286.2025.10985476

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Authors:

Shaik Rafi · **Nuti Revanth** · **K Veera Raghava Reddy** · **K Mahesh Babu** · **Y Likhith Prasanna Kumar** · **N Vijay Kumar**

A Comprehensive Analysis of Chronic Kidney Disease Prediction through Machine Learning: Insights from Decision Tree Modeling

Conference Paper

Dec 2024

Priha Bhatti · Maria Kainat · Munsif Ali Jatoi · Muhammad Ather Ameen

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Advanced Machine Learning Approaches for Infant Cry Classification using Audio Feature Extraction

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Conference: 2024 International Conference on Integrated Intelligence and Communication Systems (ICIICS)

Authors:

Vijay Kumar Nukala · Sathyam Reddy Motheline · John Wesley Kolasanakoti · Sunil Vankayalapati

Show all 6 authors

Conference Paper

Enhanced Multi-Class Classification of Kidney Abnormalities Using VGG16 and Advanced CT Image Analysis Techniques

December 2024

DOI:10.1109/SCOPES64467.2024.10990409

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Authors:

Vijay Kumar Nukala | Mahesh Kavali | Jagadeesh Dasari | Srikanth Nuthalapati

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Chronic Kidney Disease Prediction using Machine Learning

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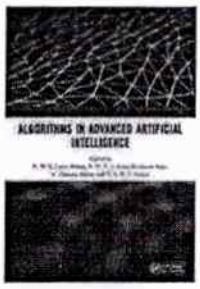
Chapter



Unveiling the Power of Classic ML Techniques in Text Classification: A Comparative Approach

By K.V. Narasimha Reddy (/search?contributorName=K.V. Narasimha Reddy&contributorRole=author&redirectFromPDP=true&context=ubx), Dodda Venkatareddy (/search?contributorName=Dodda Venkatareddy&contributorRole=author&redirectFromPDP=true&context=ubx), Singam Venkata Satya Vijaya Ganesh (/search?contributorName=Singam Venkata Satya Vijaya Ganesh&contributorRole=author&redirectFromPDP=true&context=ubx), Boggavarapu Charan Deepak (/search?contributorName=Boggavarapu Charan Deepak&contributorRole=author&redirectFromPDP=true&context=ubx), Mekala Gopi Manikanta (/search?contributorName=Mekala Gopi Manikanta&contributorRole=author&redirectFromPDP=true&context=ubx)

Book Algorithms in Advanced Artificial Intelligence (https://www.taylorfrancis.com/books/mono/10.1201/9781003641537/algorithms-advanced-artificial-intelligence?refId=71cf1c74-8d62-4569-8a7c-4fd08bac8f86&context=ubx)

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ABSTRACT

< Previous Chapter (chapters/edit/10.1201/9781003641537-6/sustainable-shrimp-farming-aquaculture-using-approximate-nearest-neighbour-manne-venkata-subbarao-jagan-mohan?context=ubx)

Next Chapter > (chapters/edit/10.1201/9781003641537-8/resilient-frequency-control-islanded-microgrid-using-mother-optimization-algorithm-pavan-kumar-veeli-nerella-sameera?context=ubx)

Ensemble-Based Transfer Learning for Multi-Class Plant Disease Detection Us VGG16, ResNet50, and Xception Models

Publisher: IEEE Cite This PDF

Popuri Mohana Siva Lakshmi ; K. LakshmiNadh ; K.V. Narasimha Reddy ; Dodda Venkata Reddy **All Authors**

Abstract:
In the world, plant diseases pose a serious threat to agricultural productivity and food security. Early, accurate, rapid identification of plant diseases is important for con-trolling loss of crops. In the following research, transfe learning models VGG16, ResNet50, and Xception are applied to attempt overcoming this challenge of multicla disease detection. To improve classification accuracy, we propose an ensemble model that combines the stren these pre-trained networks. Multiple plant species and disease categories were experimented on extensively c publicly available plant disease datasets. The results show that ensemble model achieves better precision, pre and recall than individual models and therefore presents a robust solution for identifying several plant diseases together as a pack. Results from the experiment demonstrate that the proposed method could be deployed in agricultural systems and have potential to provide a scalable and efficient diagnostic tool for farmers and agro to detect plant diseases and reduce their impact. This work is among the growing body of work in AI based ag solutions and indicates that transfer learning and ensemble techniques are promising in precision farming.

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Adaptive Intrusion Detection in CAN-Based Vehicular Networks Using Transfe Learning for Evolving Threats

Publisher: IEEE Cite This PDF

Dodda Venkatareddy ; Shaik Yalavarthi Ijaz Ahamad ; Sinde Venkata Saptha Girish ; Tammisetti Nagendra Babu ; K. V. Narasimha Reddy **All Autho**

Abstract:
This is the CAN-based system security, which is constantly under serious threats due to increasing vehicular n connectivity through sophisticated cyber-attacks. In this paper, we propose an online reconfigurable IDS which methods to adapt to new attack patterns with minimal retraining. That would allow refining the pre-trained mod the specialized car hacking dataset to detect most of the known and new attacks efficiently, ensuring high dete accuracy while keeping the computation cost low. Dynamic reconfigurability assures protection in an ever-evol threat landscape. Extensive experiments on real-world CAN datasets validate the effectiveness of the propose approach, achieving an overall detection rate of over 99% for different types of attack classes. The approach h toward demonstrating the potential of TL for enhancing adaptability, efficiency, and accuracy in improving conn vehicle IDSs through a sound solution to secure automotive systems against the emergence of cyber threats.

Published in: 2024 First International Conference on Innovations in Communications, Electrical and Compute Engineering (ICICEC)

Date of Conference: 24-25 October 2024

DOI: 10.1109/ICICEC62498.2024.10808423

Date Added to IEEE *Xplore*: 30 December 2024

Publisher: IEEE

ISBN Information:

Conference Location: Davangere, India

Explainable Fetal Ultrasound Classification with CNN and MLP Models

Publisher: IEEE Cite This PDF

Dodda Venkatareddy ; K.V. Narasimha Reddy ; Yendluri Sowmya ; Yarlagadda Madhavi ; Shaik Chand Asmi ; Sireesha Moturi **All Authors**

Abstract:
Artificial Intelligence has greatly influenced healthcare, most particularly in medical imaging. This paper represents a review in large form that classifies fetal ultrasound images with the use of convolutional neural networks and multi-Layer Perceptrons. While CNN is very good at spatial feature extraction in image classification, their lack of interpretability presents challenges toward applications in health. In this regard, we include methods of Explainable AI (XAI), more precisely Local Interpre table Model-Agnostic Explanations (LIME), for giving more transparency and confidence in the decision-making process of such models. The research here utilizes 12,400 fetal ultrasound images, which were classified under six anatomical structures. The CNN and MLP models showed very promising classification performances of 93.24% and 91.17%, respectively. LIME was implemented to interpret model predictions and to more clearly identify factors contributing to the classification. The results also show that explainability enhances not only trust in AI-based diagnostics but also model reliability in clinical settings.

Published in: 2024 First International Conference on Innovations in Communications, Electrical and Computer Engineering (ICICEC)

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Date Added to IEEE *Xplore*: 30 December 2024

Publisher: IEEE

ISBN Information:

Conference Location: Davangere, India

I. Introduction

Over the years, artificial intelligence (AI) has taken a significant role in changing the healthcare scene, especially in medical imaging. Deep learning has been one of the many AI methods but has become the one that healthcare workers can use to make diagnoses and tr[illegible] ccurate. The main thing that makes

Authors
Figures
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ResNet-CNN Model for Plant Disease Classification for E-Agriculture Applicati

Publisher: IEEE Cite This PDF

Arava Vamsi Kumar ; S. V. N. Sreenivasu ; Kandi Venkata Narasimha Reddy All Authors

Abstract:
The advancement of an economy's innovation capacity is closely tied to the progress in agriculture. Effective p disease management is crucial for optimizing crop yields and ensuring agricultural sustainability. This project f on developing a Plant Disease Detection and Classification Network (PDDC-Net) by integrating deep learning The preprocessing stage standardized the dataset images by eliminating various types of interference. The PD employs a Residual Network (ResNet)-Convolution Neural Network (CNN), featuring residual networks, to enh feature extraction and classification accuracy. The PDDC-Net model demonstrated exceptional performance ir detecting and classifying plant leaf diseases. Specifically, it achieved an accuracy rate of 99.84% across vario diseased leaves, including those from potato, tomato, and pepper plants. Further, the suitable pesticide also s for the recognised disease. The proposed PDDC-Net effectively addresses the challenge of plant disease iden with high accuracy, underscoring its potential as a robust tool for agricultural disease management and innova

Published in: 2024 International Conference on Intelligent Algorithms for Computational Intelligence Systems

Date of Conference: 23-24 August 2024

DOI: 10.1109/IACIS61494.2024.10722020

Date Added to IEEE *Xplore*: 24 October 2024

Publisher: IEEE

ISBN Information:

Conference Location: Hassan, India

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Kandi Venkata Narasimha Reddy
Department of Computer Science & Engineering, Narasaraopeta Engineering College, Narasaraopet, India

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RESEARCH ARTICLE | FEBRUARY 14 2025

Brain tumor detection using deep learning techniques

K. V. Narasimha Reddy ✉; Venkata Reddy Dodda; Ramakrishna Reddy Mule; P. Ramesh Babu; M. Aparna

+ Author & Article Information

AIP Conf. Proc. 3162, 020072 (2025)

https://doi.org/10.1063/5.0242382

In medical image analysis, Brain tumour detection is the most prominent one. Classification of Brain tumorsas tumorous or nontumorous is the primarytask. The existing way to detect tumors is by using Magnetic Resonance Images(MRI). Looking at the MR images directly to detect the tumor results in inaccurate detection of the tumor so we have proposed a system in thisprojectwhichisbasedupon analgorithm from deep learning called Convolutional Neural Network(CNN). Convolutional Neural Networks (CNNs) are a deep learning method for doing image classification. This paper puts forward a model based on convolutional neural networks that detect tumors from MR images of the brain.

Topics

Magnetic resonance, **Convolutional neural network**, **Deep learning**, **Learning and learning models**, **Optical imaging**, **Cancer**, **Neuroanatomy**

REFERENCES

1. S. EDY, W. I, and W.A, "Clinical Characteristics and Histopathology of Brain Tumor at Two Hospitals in Bandar Lampung," *Fac. Med. Lampung Univ.*, vol. 69, pp. 48–56, 2014.
Google Scholar

2. Wadhwa, A. Bhardwaj, and V. Singh Verma, "A review on brain tumor segmentation of MRI images," *Magn. Reson. Imaging*, vol. 61, no. January, pp. 247–259, 2019.

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A Novel Proxy Re-Encryption Technique for Secure Data Sharing in Cloud Environment

Publisher: IEEE Cite This PDF

K.V. Narasimha Reddy ; DoddaVenkata Reddy ; Padamata Ramesh Babu ; Anantha Raman G R ; Balasubramani S **All Authors**

Abstract:
In general, Cloud Computing refers to the storage and access of data through the internet rather than on a local computer hard drive. Cloud services assist in reducing the amount of space and money required for data storage. Data that must be accessed from the cloud must be protected. However, cloud owners and users have a big hurdle in terms of security and personal data privacy. Due to the data owners' lack of trust, they save their data in an encrypted format that is inaccessible to outsiders. The phrase "proxy re-encryption" (PRE) refers to a popular way of delivering encrypted data stored in the cloud. When a data owner wants to share encrypted data with both the data user and the cloud server (proxy), the data owner generates re-encryption data and sends it to the proxy, which can use it to convert the data holder's ciphertexts into the user's plaintexts without having to look at the plaintexts beneath. The implementation demonstrates that our proposed work protects privacy while also allowing for secure data sharing via cloud computing.

Published in: 2024 International Conference on Advances in Data Engineering and Intelligent Computing Systems (ADICS)

Date of Conference: 18-19 April 2024

DOI: 10.1109/ADICS58448.2024.10533626

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Publisher: IEEE

ISBN Information:

Conference Location: Chennai, India

Multimodal: A Text-Image based Cyber-Bullying Detecting with Deep Learning

Publisher: IEEE Cite This PDF

Ambati Ankarao ; Shaik Rafi ; Rama Krishna Eluri ; K. V. Narasimha Reddy **All Authors**

Abstract:
The practice of categorizing and identifying cyber-bullying behavior, which include using technology to harass or intimidate people—usually through online platforms—is known as cyberbullying detection. To tackle this, we took a look at a dataset that was made public and labeled as bully or non-bully based on text, image, and image-text. Then, we proposed a deep learning model that could identify cyberbullying in multimodal data. Bullying in text is detected using the XLM-RoBERTa with BiGRU model, while bullying in images is identified by the VGG16 pre-trained model. Using attention processes, CLIP, feedback mechanisms, CentralNet, and other tools, we combined these models (VGG16 + XLM-RoBERTa and BiGRU) and developed a model for identifying cyberbullying in image-text based memes.With a respectable accuracy of 72%, our final model demonstrated that the system is capable of identifying the majority of cyberbullying incidents.

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Date of Conference: 06-08 March 2025

DOI: 10.1109/IATMSI64286.2025.10985245

Date Added to IEEE *Xplore*: 09 May 2025

Publisher: IEEE

ISBN Information:

Conference Location: Gwalior, India

I. Introduction

The use of social media platforms and digital technology is growing quickly in the current era. Cyberbullying can happen via a number of platforms, including WhatsApp, Instagram, Facebook, and Twitter. The use of digital technology to threaten, harass, or bully a p... Major consequences including emotional pain, anxiety, sadness, and even... this. Cyberbullying need's to be...

Authors

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K. V. Narasimha Reddy
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References

Keywords

61

Conference Paper

Harnessing Machine Learning for Improved Heart Disease Prediction

November 2024

DOI:10.1109/UPCON62832.2024.10983291

Conference: 2024 IEEE 11th Uttar Pradesh Section International Conference on Electrical, Electronics and Computer Engineering (UPCON)

Authors:

Dodda Venkatreddy · K.V. Narasimha Reddy · Jay Kumar Pandey · Ch. Prasanth · A. Vishnukumar · K.Manikanta Rao

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Explainable Fetal Ultrasound Classification with CNN and MLP Models

Publisher: IEEE Cite This PDF

Dodda Venkatareddy ; K.V. Narasimha Reddy ; Yendluri Sowmya ; Yarlagadda Madhavi ; Shaik Chand Asmi ; Sireesha Moturi All Authors

Abstract:
Artificial Intelligence has greatly influenced healthcare, most particularly in medical imaging. This paper represents a review in large form that classifies fetal ultrasound images with the use of convolutional neural networks and multi-Layer Perceptrons. While CNN is very good at spatial feature extraction in image classification, their lack of interpretability presents challenges toward applications in health. In this regard, we include methods of Explainable AI (XAI), more precisely Local Interpre table Model-Agnostic Explanations (LIME), for giving more transparency and confidence in the decision-making process of such models. The research here utilizes 12,400 fetal ultrasound images, which were classified under six anatomical structures. The CNN and MLP models showed very promising classification performances of 93.24% and 91.17%, respectively. LIME was implemented to interpret model predictions and to more clearly identify factors contributing to the classification. The results also show that explainability enhances not only trust in AI-based diagnostics but also model reliability in clinical settings.

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Publisher: IEEE

ISBN Information:

Conference Location: Davangere, India

I. Introduction

Over the years, artificial intelligence (AI) has taken a significant role in changing the healthcare scene, especially in medical imaging. Deep learning has been one of the many AI methods but has become the one that healthcare workers can use to make diagnoses and t[illegible]ccurate. The main thing that makes

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Keywords

Metrics

63

Conference Paper

Computer Aided Detection of Breast Cancer Using Bio Inspired Algorithm

March 2025

DOI:10.1109/IATMSI64286.2025.10985427

Conference: 2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)

Authors:

Syed Rizwana · Peddi Kavya · Bolla Vinay Pooja · Bandi Poojitha · Shaik Khaja Mohiddin Basha · Dodda Venkatareddy

References (17)

No full-text available

Citations (0) References (17)

Computer-aided detection of breast cancer on the Wisconsin dataset: An artificial neural networks approach

Article Full-text available

Jan 2022 · BIOMED SIGNAL PROCES

Mohammad H Alshayeji · Hanem Ellethy · Sa'Ed Abed · Renu Gupta

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Digital subtraction of temporally sequential mammograms for improved detection and classification of microcalcifications

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Leveraging Deep Learning for Enhanced Pneumonia Detection in Chest X-Ray

Publisher: IEEE Cite This

Shaik Khaja Mohiddin Basha ; Pogula Sai Sri Varsha ; Sankuru Sai Latha ; Vemula Sireesha ; Syed Rizwana All Authors

Abstract:
Early detection of pneumonia and acute respiratory infections caused by viruses and bacteria is critical for effe treatment and prevention of serious complications. Advanced technologies, especially AI and Deep learning, h proven valuable in enhancing this process. Our study introduces the Deep CNN (Convolutional Neural Networ Algorithm, a modified deep convolutional neural network A model using chest X-rays to predict pneumonia in i groups and uninfected groups by preprocessing. Using a dataset of 5,855 segmented images enhanced by da augmentation techniques, Deep CNN achieved a high classification accuracy of 91.46% for unseen images. T performance outperforms traditional models such as ImageNet, DenseNet, and VGG16, providing a model for diagnosis of lung disease. Demonstrating high potential, the Deep CNN model represents a major advance in imaging technology, providing a reliable tool for early diagnosis and guiding treatment strategies. Its high accu highlights the potential of AI-driven processes to transform healthcare, improve patient outcomes, and support effective and timely treatment.

Published in: 2024 First International Conference on Innovations in Communications, Electrical and Compute Engineering (ICICEC)

Date of Conference: 24-25 October 2024
DOI: 10.1109/ICICEC62498.2024.10808618
Date Added to IEEE *Xplore*: 30 December 2024
Publisher: IEEE
ISBN Information:
Conference Location: Davangere, India

Detecting multimodal cyber-bullying behaviour in social-media using deep learning techniques

Published: 12 December 2024

Volume 81, article number 284, (2025) Cite this article

Shaik MohammedJany, Chandra Bhushana Rao Killi, Shaik Rafi & Syed Rizwana

Abstract

Cyberbullying detection refers to the process of classifying and identifying of cyberbullying behavior—which involves the use of technology to harass, or bullying individuals, typically through online platforms. A growing concern is the spread of bullying memes on social media, which can perpetuate harmful behavior. While much of the existing research focuses on detecting cyberbullying in text-based data, image-based cyberbullying has not received as much attention. This is a significant issue because many social media posts combine images with text, and the visual content can be a key component of cyberbullying. To address this, our research aims to develop a multimodal cyberbullying detection modal (MCB) that is capable of detecting bullying in both images and text. For this, we used VGG16 pretrained model to detect bullying in images and XLM-RoBERTa with BiGRU model to detect bullying in text. Together we integrated these

Early Diagnosis of Lung Cancer Using Hyperparameter-Tuned Machine Learning Models

Publisher: IEEE Cite This PDF

Shaik Khaja Mohiddin Basha ; Syed Rizwana ; Gottimukkala Sasank Chandra ; Gudi Manikanta ; Bukya Venkata Sai Durga Naik ; Venkata Reddy Dodda

All Authors

Abstract:
Globally, lung cancer is the leading cause of cancer-related deaths. Improving survival depends on early and precise identification, which is still mostly accomplished using antiquated techniques that are frequently ineffective and erroneous. In this study, we used patient demographic and clinical data to create a machine learning-based risk prediction model that aims to diagnose lung cancer early and accurately. To verify the performance on our lung cancer data set, we employed important machine learning algorithms such as logistic regression, random forest, and support vector machines (SVM). PCA for feature selection, resampling to balance classes, and handling missing values were all examples of preprocessing. Among models, Random Forest shown excellent efficiency in risk detection, while SVM ultimately.

Published in: 2024 International Conference on Integrated Intelligence and Communication Systems (ICIICS)

Date of Conference: 22-23 November 2024

DOI: 10.1109/ICIICS63763.2024.10859881

Date Added to IEEE *Xplore*: 05 February 2025

Publisher: IEEE

ISBN Information:

Conference Location: Kalaburagi, India

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Conference Paper

Enhancing Wine Quality Prediction Through Machine Learning Techniques

March 2025
DOI:10.1109/IATMSI64286.2025.10984544
Conference: 2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)

Authors:

Syed Rizwana | Pasupuleti Murali Priya | Kapu Suvarshitha | Modhepalli Gayathri | Rama Krishna Eluri | M. Sireesha

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A Multi-Modality Approach to Breast Cancer Diagnosis: Fusing Ultrasound with Other Imaging Techniques

Publisher: IEEE Cite This PDF

Syed Rizwana ; Shaik Inthiyaz ; Ala Lakshmi Priyanka ; Tirunavalli Mohana ; Shaik Khaja Mohiddin Basha ; Dodda Venkatareddy **All Authors**

Abstract:
It is the most crucial health issue related to mortality rates among females globally. In relation to that, there have been recent developments in AI and ML to serve better the diagnosis process of breast cancer. The present study hence forth proposed a new way of analzsing the breast using ultrasound imaging with transfer learning and ensemble methods. It integrates cutting edge transfer learning models with advanced ensemble techniques based on Multi-Layer Perceptron's and Support Vector Machines with different kernels. Finally, this system is evaluated, which provides a classification accuracy of 90% and an overall accuracy of 90% with evidence of significant i m provement o v er existing diagnostic systems. It offers a structured procedure covering all steps from handling the input data up to model training and performance evaluation; it, therefore seems to be particularly effective for diagnostics enhancement related to breast cancer.

Published in: 2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)

Date of Conference: 06-08 March 2025

DOI: 10.1109/IATMSI64286.2025.10985453

Date Added to IEEE *Xplore*: 09 May 2025

Publisher: IEEE

ISBN Information:

Conference Location: Gwalior, India

I. Introduction

Ensemble Transfer Learning Strategies focuses on breast cancer as a prime concern for world health. According to the WHO, it became the most common cancer diagnosed in 2020, surpassing even lung cancer, with 2.26 million new cases. It also states as a principal point that early detection forms one of the essential approaches toward establishing better survival outcomes with regard to breast cancer, while drawing attention to the increasing role of AI and DL in enhancing the quality of ultras breast cancer. [1] Advanced

Classification of Music Genre Using Deep Learning Approaches

Publisher: IEEE Cite This PDF

U. Mohan Srinivas ; Shaik Rafi ; Tinnavalli Venkata Manohar ; M. Venkat Rao **All Authors**

Abstract:
Music genre classification is a pivotal area of research within audio technology, holding immense importance f content organization and recommendation. Audio feature extraction and Music genre classification constitute a complete recognition system. Audio feature analysis and Music genre classification together form an integrate recognition system for comprehensive music genre identification and organization. This technology is frequent to accurately detect and classify various types of music genres or characteristics present in audio signals, con significantly to the effective organization and recommendation of music content. Our experiment was conducte the dataset from GTZAN that is taken from Kaggle repository. Convolutional neural networks (CNN) are emplo train our model, which is subsequently utilized for the classification of music genres in audio signals.

Published in: 2024 4th International Conference on Artificial Intelligence and Signal Processing (AISP)

Date of Conference: 26-28 October 2024

DOI: 10.1109/AISP61711.2024.10870721

Date Added to IEEE *Xplore*: 12 February 2025

Publisher: IEEE

ISBN Information:

Conference Location: VIJAYAWADA, India

ISSN Information:

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Detecting multimodal cyber-bullying behaviour in social-media using deep learning techniques

Published: 12 December 2024

Volume 81, article number 284, (2025) Cite this article

The Journal of Supercomputing

Aims and scope

Submit manuscript

Shaik MohammedJany, Chandra Bhushana Rao Killi, Shaik Rafi & Syed Rizwana

Abstract

Cyberbullying detection refers to the process of classifying and identifying of cyberbullying behavior—which involves the use of technology to harass, or bullying individuals, typically through online platforms. A growing concern is the spread of bullying memes on social media, which can perpetuate harmful behavior. While much of the existing research focuses on detecting cyberbullying in text-based data, image-based cyberbullying has not received as much attention. This is a significant issue because many social media posts combine images with text, and the visual content can be a key component of cyberbullying. To address this, our research aims to develop a multimodal cyberbullying detection modal (MCB) that is capable of detecting bullying in both images and text. For this, we used VGG16 pretrained model to detect bullying in images and XLM-RoBERTa with BiGRU model to detect bullying in text. Together we integrated these

Rainfall Prediction Using Machine Learning

Publisher: IEEE Cite This PDF

S.V.N. Sreenivasu ; Shaik. Rafi ; V.V.A.S. Lakshmi ; S. Sivanageswara Rao ; Ch. Rajani All Authors

Abstract:
The title is "Rainfall Prediction Using Machine Learning". The initiative's dataset is written in Python and stored in Microsoft Excel. A wide range of machine learning algorithms are used to discover which strategy generates the best accurate predictions. In many sections of the country, rainfall forecasting is critical for avoiding major natural disasters. This forecast was created using a variety of machine learning approaches, including catboost, xgboost, decision tree, random forest, logistic regression, neural network, and light gbm. It incorporates several components. The Weather Dataset was utilized. The primary goal of the research is to evaluate a variety of algorithms and determine which one performs best. Farmers may greatly profit from growing the appropriate crops based on the amount of water they require.

Published in: 2024 2nd International Conference on Recent Trends in Microelectronics, Automation, Computing and Communications Systems (ICMACC)

Date of Conference: 19-21 December 2024

DOI: 10.1109/ICMACC62921.2024.10894486

Date Added to IEEE *Xplore*: 26 February 2025

Publisher: IEEE

ISBN Information:

Conference Location: Hyderabad, India

72

Automatic Attendance Management System Using CNN

Publisher: IEEE Cite This

S.V.N Sreenivasu ; Ch. Rajani ; Birlangi Usha Rani ; Arangi Dasaradha ; Shaik Rafi •••

Abstract:
Facial recognition technology plays a crucial role in various applications, from enhancing security at banks and organizations to streamlining attendance tracking in publ... **Show More**

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Multimodal: A Text-Image based Cyber-Bullying Detecting with Deep Learning

Publisher: IEEE Cite This PDF

Ambati Ankarao ; Shaik Rafi ; Rama Krishna Eluri ; K. V. Narasimha Reddy **All Authors**

Abstract:
The practice of categorizing and identifying cyber-bullying behavior, which include using technology to harass or intimidate people—usually through online platforms—is known as cyberbullying detection. To tackle this, we took a look at a dataset that was made public and labeled as bully or non-bully based on text, image, and image-text. Then, we proposed a deep learning model that could Bullying in text is detected using the XLM-RoBERTa with BiGRU model, wh GG16 pre-trained model. Using attention processes, CLIP, feedback mech mbined these models (VGG16 + XLM-RoBERTa and BiGRU) and develope nage-text based memes.With a respectable accuracy of 72%, our final model demonstrated that the system is capable of identifying the majority of cyberbullying incidents.

Department Of Computer Science and Engineering, Narasaraopeta Engineering College, Narasaraopet, Andhra Pradesh, India

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Date Added to IEEE *Xplore*: 09 May 2025

Publisher: IEEE

ISBN Information:

Conference Location: Gwalior, India

I. Introduction

The use of social media platforms and digital technology is growing quickly in the current era. Cyberbullying can happen via a number of platforms, including WhatsApp, Instagram, Facebook, and Twitter. The use of digital technology to threaten, harass, or bully a p Major consequences including emotional pain, anger, sadness, and even his. Cyberbullying needs to be

Unveiling Student Success: A Multifaceted Approach with Learning Coefficients and Beyond

Publisher: IEEE Cite This PDF

Nukala Vijaya Kumar ; Shaik Rafi ; Tumpala Mahith ; D. Venkata Reddy ; Kethavath Ravi Naik ; Kolakani Raju **All Authors**

Abstract:
The student performance is examined in this study using a number of methods of Educational Data Mining (EDM), Clustering and classification techniques are employed to classify the course as well as the performance in the entrance examination. The results obtained show that the Random Forest and XG Boost which are machine learning models outperform traditional methods for predicting student success. Moreover, CNN and LSTM Networks, which are deep learning models, improve prediction accuracy even further. Conducted through metrics like accuracy, precision, recall and Fl-score, this study shows that any form of recognition of the pattern, in this case, the early one, helps to reduce failure rates to considerable extents. The results of this study suggest that there is a potential scope for further improving prediction algorithms and management of educational resources, which are of great relevance to the institutions to further the student success.

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ISBN Information:

Conference Location: Kalaburagi, India

I. Introduction

Education, which is a necessary societal element, is heavily influential on various aspects of life. The integration of information and communication technologies has changed many fields of study including education. COVID-19 pandemic for instance has forced several countries to adopt e-Learning environments much faster than they would have done in normal circumstances [1]–[3]. Higher education institutions consider the academic achievement of students as one of the main indicators for the quality of service they offer. However, it might be difficult to identify what are the key elements that influence a student's performance during their early years at school. In response to issues concerning academic performance, many useful instruments have been developed but these tools are often not applicable elsewhere in education contexts [3]. Despite advances in predicting students' outcomes, there are still gaps in data-based analysis and augmentation of student results using technology across all areas. Consequently, EDM has the potential to improve education institutions whole student experience as well as teaching/learning [1]. Because academic achievement is strongly correlated with desired outcomes, it is extremely important. Academic achievement among college or university students still remains a critical indicator of institutional success. Student's academic p[illegible] predicted using variables such as basic courses and non-academic performance and name of university. This study uses consequences from assignments, final examinations and primary-degree profile scores [3]. This research provides a singular software [illegible]

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Conference Paper

Chronic Kidney Disease Prediction Using Machine Learning and Deep Learning Models

March 2025

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Authors:

Shaik Rafi | **Nuti Revanth** | **K Veera Raghava Reddy** | **K Mahesh Babu** | **Y Likhith Prasanna Kumar** | **N Vijay Kumar**

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Conference Paper

Detecting Sarcasm Across Headlines and Text

March 2025

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Conference: 2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)

Authors:

Shaik Rafi · Ambati Lakshmi Niharika · Seva Neelima · Kadiyala Nikhitha · Mothe Sathyam Reddy · M. Sireesha

References (17)

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A contextual-based approach for sarcasm detection

Article Full-text available

Jul 2024

Alvin Helal · Ahmed Hassan Abdelgawad · Nagwa Badr · Yasmine Afify

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Decoding sarcasm: unveiling nuances in newspaper headlines

Article Full-text available

Jun 2024 · IJECE

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Conference Paper

Advanced Machine Learning Approaches for Infant Cry Classification using Audio Feature Extraction

November 2024

DOI:10.1109/ICIICS63763.2024.10859873

Conference: 2024 International Conference on Integrated Intelligence and Communication Systems (ICIICS)

Authors:

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18

Conference Paper

Detecting Sarcasm Across Headlines and Text

March 2025

DOI:10.1109/IATMSI64286.2025.10984543

Conference: 2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)

Authors:

Shaik Rafi · **Ambati Lakshmi Niharika** · **Seva Neelima** · **Kadiyala Nikhitha** · **Mothe Sathyam Reddy** · **M. Sireesha**

References (17)

Citations (0) References (17)

A contextual-based approach for sarcasm detection

Article Full-text available

Jul 2024

Nivin Helal · Ahmed Hassan Abdelgawad · Nagwa Badr · Yasmine Afify

View Show abstract

Decoding sarcasm: unveiling nuances in newspaper headlines

Article Full-text available

Jun 2024 · IJECE

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Conference Paper

Unveiling the Potential of Deep Learning: A Multifaceted Approach to Pulmonary Disease Detection and Clinical Integration

March 2025

DOI:10.1109/IATMSI64286.2025.10984573

Conference: 2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)

Authors:

K LakshmiNadh | Gurram Siva Anjali | Pandi Jyoshna Devi | Gude Lavanya | Chalicheema Rajani | Dodda Venkata Reddy

References (14)

Citations (0) References (14)

PulmoNet: a novel deep learning based pulmonary diseases detection model

Article Full-text available

Feb 2024 · BMC Med Imag

Abdulrahman Tosho Abdulahi · Roseline Ogundokun · Ajiboye Raimot Adenike · Yusuf Kola Ahmed

View Show abstract

Clinical Characteristics, Diagnosis, Treatment, and Mortality Rate of TB/COVID-19

Unveiling Student Success: A Multifaceted Approach with Learning Coefficients and Beyond

Publisher: IEEE Cite This PDF

Nukala Vijaya Kumar ; Shaik Rafi ; Tumpala Mahith ; D. Venkata Reddy ; Kethavath Ravi Naik ; Kolakani Raju **All Authors**

Abstract:
The student performance is examined in this study using a number of methods of Educational Data Mining (EDM), Clustering and classification techniques are employed to classify the course as well as the performance in the entrance examination. The results obtained show that the Random Forest and XG Boost which are machine learning models outperform traditional methods for predicting student success. Moreover, CNN and LSTM Networks, which are deep learning models, improve prediction accuracy even further. Conducted through metrics like accuracy, precision, recall and FI-score, this study shows that any form of recognition of the pattern, in this case, the early one, helps to reduce failure rates to considerable extents. The results of this study suggest that there is a potential scope for further improving prediction algorithms and management of educational resources, which are of great relevance to the institutions to further the student success.

Published In: 2024 International Conference on Integrated Intelligence and Communication Systems (ICIICS)

Date of Conference: 22-23 November 2024

DOI: 10.1109/ICIICS63763.2024.10859995

Date Added to IEEE *Xplore*: 05 February 2025

Publisher: IEEE

ISBN Information:

Conference Location: Kalaburagi, India

I. Introduction

Education, which is a necessary societal element, is heavily influential on various aspects of life. The integration of information and communication technologies has changed many fields of study including education. COVID-19 pandemic for instance has forced several countries to adopt e-Learning environments much faster than they would have done in normal circumstances [1]–[3]. Higher education institutions consider the academic achievement of students as one of the main indicators for the quality of service they offer. However, it might be difficult to identify what are the key elements that influence a student's performance during their early years at school. In response to issues concerning academic performance, many useful instruments have been developed but these tools are often not applicable elsewhere in education contexts [3]. Despite advances in predicting students' outcomes, there are still gaps in data-based analysis and augmentation of student results using technology across all areas. Consequently, EDM has the potential to improve education institutions whole student experience as well as teaching/learning [1]. Because academic achievement is strongly correlated with desired outcomes, it is extremely important. Academic achievement among college or university students still remains a critical indicator of institutional success. Student's academic p[illegible] predicted using variables such as basic courses and non-academic performance and name of university. This study uses consequences from assignments, final examinations and primary-degree route scores [3]. This research provides a [illegible]

8)

Conference Paper

Computer Aided Detection of Breast Cancer Using Bio Inspired Algorithm

March 2025

DOI:10.1109/IATMSI64286.2025.10985427

Conference: 2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)

Authors:

Syed Rizwana · Peddi Kavya · Bolla Vinay Pooja · Bandi Poojitha · Shaik Khaja Mohiddin Basha · Dodda Venkatareddy

Advanced Pest Identification: An Efficient Deep Learning Approach Using VGG Networks

Publisher: IEEE Cite This PDF

K. Lakshminadh ; Divvela Chandu Venkateswara Guptha ; Jujjuri Sai ; Kandula Rajesh ; Sireesha Moturi ; Yaragani Neelima All Authors

Abstract:
Accurate pest identification is crucial for both effective pest management and crop protection. Pests must be found early in order to minimise damage and guarantee crop security. Conventional techniques typically entail visual examination and professional involvement, which might be time-consuming and susceptible to errors by humans. On the other hand, deep learning-powered high-performance systems can now more accurately identify pests thanks to developments in computer vision. In this work, we employed the Keras-based deep learning models VGG16 and VGG19 to construct a passive pest detection system. We greatly improved the efficacy of these models in identifying pest species by using strategies such data augmentation, model optimization, and modification of validated models. The VGG16 model produced an amazing accuracy rate of 99.8% and VGG19 model produced an accuracy of 96.8 % in our testing.

Published in: 2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)

Date of Conference: 06-08 March 2025

DOI: 10.1109/IATMSI64286.2025.10984619

Date Added to IEEE *Xplore*: 09 May 2025

Publisher: IEEE

ISBN Information:

Conference Location: Gwalior, India

I. Introduction

The world economy depends heavily on agriculture, but pests pose a important challenge to crop production and food security. Pests are responsible for the largest crop losses worldwide, hampering agricultural growth, especially in light of increasing global dem

that use flow visualisation are

Authors

Figures

References

Citations

Keywords

Metrics

A Novel Proxy Re-Encryption Technique for Secure Data Sharing in Cloud Environment

Publisher: IEEE Cite This PDF

K.V. Narasimha Reddy ; DoddaVenkata Reddy ; Padamata Ramesh Babu ; Anantha Raman G R ; Balasubramani S All Authors

Abstract:
In general, Cloud Computing refers to the storage and access of data through the internet rather than on a local computer hard drive. Cloud services assist in reducing the amount of space and money required for data storage. Data that must be accessed from the cloud must be protected. However, cloud owners and users have a big hurdle in terms of security and personal data privacy. Due to the data owners' lack of trust, they save their data in an encrypted format that is inaccessible to outsiders. The phrase "proxy re-encryption" (PRE) refers to a popular way of delivering encrypted data stored in the cloud. When a data owner wants to share encrypted data with both the data user and the cloud server (proxy), the data owner generates re-encryption data and sends it to the proxy, which can use it to convert the data holder's ciphertexts into the user's plaintexts without having to look at the plaintexts beneath. The implementation demonstrates that our proposed work protects privacy while also allowing for secure data sharing via cloud computing.

Published in: 2024 International Conference on Advances in Data Engineering and Intelligent Computing Systems (ADICS)

Date of Conference: 18-19 April 2024
DOI: 10.1109/ADICS58448.2024.10533626
Date Added to IEEE *Xplore*: 23 May 2024
Publisher: IEEE
ISBN Information:
Conference Location: Chennai, India

Rainfall Prediction Using Machine Learning

Publisher: IEEE Cite This PDF

S.V.N. Sreenivasu ; Shaik. Rafi ; V.V.A.S. Lakshmi ; S. Sivanageswara Rao ; Ch. Rajani All Authors

Abstract:
The title is "Rainfall Prediction Using Machine Learning". The initiative's dataset is written in Python and stored in Microsoft Excel. A wide range of machine learning algorithms are used to discover which strategy generates the best accurate predictions. In many sections of the country, rainfall forecasting is critical for avoiding major natural disasters. This forecast was created using a variety of machine learning approaches, including catboost, xgboost, decision tree, random forest, logistic regression, neural network, and light gbm. It incorporates several components. The Weather Dataset was utilized. The primary goal of the research is to evaluate a variety of algorithms and determine which one performs best. Farmers may greatly profit from growing the appropriate crops based on the amount of water they require.

Published in: 2024 2nd International Conference on Recent Trends in Microelectronics, Automation, Computing and Communications Systems (ICMACC)

Date of Conference: 19-21 December 2024

DOI: 10.1109/ICMACC62921.2024.10894486

Date Added to IEEE *Xplore*: 26 February 2025

Publisher: IEEE

ISBN Information:

Conference Location: Hyderabad, India

I. Introduction

Predicting rainfall efficiency is critical in reducing the negative effects of atypical weather patterns on agriculture, property, and livelihood. Traditional systems that rely heavily on meteorological parameters like tem-perature, humidity, and pressure may fail to provide reliable forecasts. Machine learning techniques provide a possible approach by examining previous rainfall da ed models can be constructed using methodologies such as classification and r e predictions, allowing farmers to

Authors

Figures

References

Citations

Keywords

Metrics

Early Diagnosis of Lung Cancer Using Hyperparameter-Tuned Machine Learning Models

Publisher: IEEE Cite This PDF

Shaik Khaja Mohiddin Basha ; Syed Rizwana ; Gottimukkala Sasank Chandra ; Gudi Manikanta ; Bukya Venkata Sai Durga Naik ; Venkata Reddy Dodda

All Authors

Abstract:
Globally, lung cancer is the leading cause of cancer-related deaths. Improving survival depends on early and precise identification, which is still mostly accomplished using antiquated techniques that are frequently ineffective and erroneous. In this study, we used patient demographic and clinical data to create a machine learning-based risk prediction model that aims to diagnose lung cancer early and accurately. To verify the performance on our lung cancer data set, we employed important machine learning algorithms such as logistic regression, random forest, and support vector machines (SVM). PCA for feature selection, resampling to balance classes, and handling missing values were all examples of preprocessing. Among models, Random Forest shown excellent efficiency in risk detection, while SVM ultimately.

Published in: 2024 International Conference on Integrated Intelligence and Communication Systems (ICIICS)

Date of Conference: 22-23 November 2024

DOI: 10.1109/ICIICS63763.2024.10859881

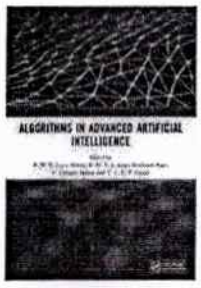
Date Added to IEEE *Xplore*: 05 February 2025

Publisher: IEEE

ISBN Information:

Conference Location: Kalaburagi, India

Chapter



Unveiling the Power of Classic ML Techniques in Text Classification: A Comparative Approach

By K.V. Narasimha Reddy (/search?contributorName=K.V. Narasimha Reddy&contributorRole=author&redirectFromPDP=true&context=ubx), Dodda Venkatareddy (/search?contributorName=Dodda Venkatareddy&contributorRole=author&redirectFromPDP=true&context=ubx), Singam Venkata Satya Vijaya Ganesh (/search?contributorName=Singam Venkata Satya Vijaya Ganesh&contributorRole=author&redirectFromPDP=true&context=ubx), Boggavarapu Charan Deepak (/search?contributorName=Boggavarapu Charan Deepak&contributorRole=author&redirectFromPDP=true&context=ubx), Mekala Gopi Manikanta (/search?contributorName=Mekala Gopi Manikanta&contributorRole=author&redirectFromPDP=true&context=ubx)

Book Algorithms in Advanced Artificial Intelligence (https://www.taylorfrancis.com/books/mono/10.1201/9781003641537/algorithms-advanced-artificial-intelligence?refId=71cf1c74-8d62-4569-8a7c-4fd08bac8f86&context=ubx)

Edition	1st Edition
First Published	2025
Imprint	CRC Press
Pages	6
eBook ISBN	9781003641537

ABSTRACT

< Previous Chapter (chapters/edit/10.1201/9781003641537-6/sustainable-shrimp-farming-aquaculture-using-approximate-nearest-neighbour-manne-venkata-subbarao-jagan-mohan?context=ubx)

Next Chapter > (chapters/edit/10.1201/9781003641537-8/resilient-frequency-control-islanded-microgrid-using-mother-optimization-algorithm-pavan-kumar-eeli-nerella-sameera?context=ubx)

86

Conference Paper

CNN-Driven Detection of Abnormalities in PCG Signals Using Gammatonegram Analysis

November 2024
DOI:10.1109/InCoWoCo64194.2024.10863151
Conference: 2024 First International Conference for Women in Computing (InCoWoCo)

Authors:

M. Sireesha · Sumanth Tata · Somnath Katragadda · Venkata Pavan Kumar Laghumavarapu · Brahmaiah Lingala · Dodda Venkata Reddy

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Beyond Deep Features: Fusing Deep Learning with Local Textures for Enhanc Plant Disease Classification

Publisher: IEEE Cite This

Mothe Suneetha ; Tanniru Harshitha ; Yadala Sandhya ; Narra Divya ; S.N.Tirumala Rao ; Dodda Venkatareddy **All Authors**

Abstract:

Precision plant disease type plays a vital role in powerful crop control, ailment control, and safeguarding agricu productiveness and food security. Deep getting-to-know fashions, mainly deep convolutional neural networks (have established themselves as surprisingly effective in diagnosing plant illnesses from huge image datasets. However, they now and again struggle with differentiating sicknesses that appear visually similar due to confin nearby texture elements. This technique combines DCNNs for high-level function extraction with neighborhoo descriptors like Local Binary Patterns (LBP) to predict the plant leaf diseases and to improve ailment category accuracy. Even in hard conditions, this framework considerably increases sensitivity and specificity by means combining worldwide and neighborhood information. Experiments on benchmark datasets show that this mode outperforms traditional techniques with an accuracy of 96%. This answer gives a realistic, reliable device for re international agriculture, permitting farmers to make properly knowledgeable choices for preserving crop outpu health

Published in: 2024 International Conference on Integrated Intelligence and Communication Systems (ICIICS)

Date of Conference: 22-23 November 2024

DOI: 10.1109/ICIICS63763.2024.10859927

Date Added to IEEE *Xplore*: 05 February 2025

Publisher: IEEE

Conference Location: Kalaburagi, India

▼ ISBN Information:

Electronic **ISBN**:979-8-3315-0496-0

Print on Demand(**PoD**) **ISBN**:979-8-3315-0497-7

Optimized Deep Learning for Multi-Class Retinal Disease Classification Using ResNet-101

Publisher: IEEE Cite This PDF

Kunda Suresh Babu ; G. Saranya ; Kattiri. Santhoshkumar ; Talari Babu ; M.Venkata Thirumala ; Dodda Venkatareddy **All Authors**

Abstract:
Machine Learning (ML) approaches, such as Artificial Neural Networks (ANN), Recurrent Neural Networks (RN Deep Learning and advanced architectures like AlexNet and ResNet, are at the leading edge of studies in the identification and type of crucial sicknesses. These techniques leverage the strength of records-driven models research complex scientific data, main to more correct and efficient diagnostic processes. This work suggests ResNet-101 model that is meant to handle multiclass classification problems, offering potentially higher accura deeper feature extraction at the cost of increased memory consumption and computational requirements. The 101 model was tested using the EyeNet dataset, which included 32 distinct types of diseases of the retina. The achieved accuracy of 98.75% when evaluated on the EyeNet dataset.

Published in: 2024 First International Conference for Women in Computing (InCoWoCo)

Date of Conference: 14-15 November 2024

DOI: 10.1109/InCoWoCo64194.2024.10863808

Date Added to IEEE *Xplore*: 06 February 2025

Publisher: IEEE

ISBN Information:

Conference Location: Pune, India

Harnessing RNN for Enhanced Hate Speech Detection in Social Media

Publisher: IEEE Cite This PDF

CH Rajani ; Thodeti Srinadh ; Kota Varun Chand ; Bathula Anil Kumar ; S.V.N. Sreenivasu ; Dodda Venkatareddy **All Authors**

Abstract:
Social media offers a platform for both conversation and hate speech, making effective detection mechanisms necessary. This paper proposes a deep learning framework using RNN for hate speech detection on Twitter, Ir and Facebook. Key findings show that the RNN-based model outperforms LSTM and GRU models, achieving accuracies of 96.75% on Twitter, 95.3% on Instagram, and 98.20% on Facebook. These results demonstrate t RNNs better capture contextual relationships within text compared to traditional methods, while also emphasiz need for specialized techniques in detecting hate speech across platforms. The pro- posed model holds signifi potential for enhancing online safety through efficient hate speech recognition. The analysis confirms RNNs' s accuracy for platform-specific hate speech detection, offering a powerful tool for improving detection strategies online safety.

Published in: 2024 International Conference on Integrated Intelligence and Communication Systems (ICIICS)

Date of Conference: 22-23 November 2024

DOI: 10.1109/ICIICS63763.2024.10859351

Date Added to IEEE *Xplore*: 05 February 2025

Publisher: IEEE

ISBN Information:

Conference Location: Kalaburagi, India

Hand Gesture Recognition: Enhancing Accuracy and Precision with Deep Learning

Publisher: IEEE Cite This PDF

T. G. Ramnadh Babu ; Dodda Venkata Reddy ; S.V.N. Sreenivasu ; K. Srinivasa Kalyan Ram ; Venkata Aravind Tunuguntla ; Shaik Hazare Khaja Mohiddin

Abstract:

Accurate, real-time recognition of hand gestures in dynamic environments remains challenging in human-comp interaction. This paper presents a hybrid deep learning model combining Convolutional Neural Networks (CNN Recurrent Neural Networks (RNN) using Long Short-Term Memory (LSTM) layers to capture both spatial and t information for dynamic hand gesture recognition. Trained on a dataset of six gestures-scroll-left, scroll-right, s scroll-down, zoom-in, and zoom-out-the model achieves an accuracy of 94.66%, with an F1 score of 0.94 and ROC of 0.95, indicating significant improvement over traditional models and practical viability in real-world app Key topics include data preprocessing, model architecture, hardware and software configurations, and perform comparisons with benchmarks. The paper concludes with discussions on limitations and future research direct enhance the model's adaptability and efficiency.

Published in: 2024 International Conference on Integrated Intelligence and Communication Systems (ICIICS)

Date of Conference: 22-23 November 2024

DOI: 10.1109/ICIICS63763.2024.10859441

Date Added to IEEE *Xplore*: 05 February 2025

Publisher: IEEE

ISBN Information:

Conference Location: Kalaburagi, India

Ensemble-Based Transfer Learning for Multi-Class Plant Disease Detection Us VGG16, ResNet50, and Xception Models

Publisher: IEEE Cite This

Popuri Mohana Siva Lakshmi ; K. LakshmiNadh ; K.V. Narasimha Reddy ; Dodda Venkata Reddy All Authors

Abstract:
In the world, plant diseases pose a serious threat to agricultural productivity and food security. Early, accurate, rapid identification of plant diseases is important for con-trolling loss of crops. In the following research, transfe learning models VGG16, ResNet50, and Xception are applied to attempt overcoming this challenge of multicla disease detection. To improve classification accuracy, we propose an ensemble model that combines the strer these pre-trained networks. Multiple plant species and disease categories were experimented on extensively c publicly available plant disease datasets. The results show that ensemble model achieves better precision, pre and recall than individual models and therefore presents a robust solution for identifying several plant diseases together as a pack. Results from the experiment demonstrate that the proposed method could be deployed in agricultural systems and have potential to provide a scalable and efficient diagnostic tool for farmers and agro to detect plant diseases and reduce their impact. This work is among the growing body of work in AI based agı solutions and indicates that transfer learning and ensemble techniques are promising in precision farming.

Published in: 2024 International Conference on IoT Based Control Networks and Intelligent Systems (ICICNI

Date of Conference: 17-18 December 2024

DOI: 10.1109/ICICNIS64247.2024.10823254

Date Added to IEEE *Xplore*: 10 January 2025

Publisher: IEEE

ISBN Information:

Conference Location: Bengaluru, India

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Adaptive Intrusion Detection in CAN-Based Vehicular Networks Using Transfe Learning for Evolving Threats

Publisher: IEEE Cite This PDF

Dodda Venkatareddy ; Shaik Yalavarthi Ijaz Ahamad ; Sinde Venkata Saptha Girish ; Tammisetti Nagendra Babu ; K. V. Narasimha Reddy **All Autho**

Abstract:
This is the CAN-based system security, which is constantly under serious threats due to increasing vehicular n connectivity through sophisticated cyber-attacks. In this paper, we propose an online reconfigurable IDS which methods to adapt to new attack patterns with minimal retraining. That would allow refining the pre-trained mod the specialized car hacking dataset to detect most of the known and new attacks efficiently, ensuring high dete accuracy while keeping the computation cost low. Dynamic reconfigurability assures protection in an ever-evol threat landscape. Extensive experiments on real-world CAN datasets validate the effectiveness of the propose approach, achieving an overall detection rate of over 99% for different types of attack classes. The approach h toward demonstrating the potential of TL for enhancing adaptability, efficiency, and accuracy in improving conn vehicle IDSs through a sound solution to secure automotive systems against the emergence of cyber threats.

Published in: 2024 First International Conference on Innovations in Communications, Electrical and Compute Engineering (ICICEC)

Date of Conference: 24-25 October 2024

DOI: 10.1109/ICICEC62498.2024.10808423

Date Added to IEEE *Xplore*: 30 December 2024

Publisher: IEEE

ISBN Information:

Conference Location: Davangere, India

Explainable Fetal Ultrasound Classification with CNN and MLP Models

Publisher: IEEE Cite This PDF

Dodda Venkatareddy ; K.V. Narasimha Reddy ; Yendluri Sowmya ; Yarlagadda Madhavi ; Shaik Chand Asmi ; Sireesha Moturi All Authors

Abstract:
Artificial Intelligence has greatly influenced healthcare, most particularly in medical imaging. This paper repres review in large form that classifies fetal ultrasound images with the use of convolutional neural networks and m Layer Perceptrons. While CNN is very good at spatial feature extraction in image classification, their lack of interpretability presents challenges toward applications in health. In this regard, we include methods of Explair (XAI), more precisely Local Interpre table Model-Agnostic Explanations (LIME), for giving more transparency a confidence in the decision-making process of such models. The research here utilizes 12,400 fetal ultrasound which were classified under six anatomical structures. The CNN and MLP models showed very promising clas performances of 93.24% and 91.17%, respectively. LIME was implemented to interpret model predictions and clearly identify factors contributing to the classification. The results also show that explainability enhances not in AI-based diagnostics but also model reliability in clinical settings.

Published in: 2024 First International Conference on Innovations in Communications, Electrical and Compute Engineering (ICICEC)

Date of Conference: 24-25 October 2024

DOI: 10.1109/ICICEC62498.2024.10808626

Date Added to IEEE *Xplore*: 30 December 2024

Publisher: IEEE

ISBN Information:

Conference Location: Davangere, India

RESEARCH ARTICLE | FEBRUARY 14 2025

Brain tumor detection using deep learning techniques

K. V. Narasimha Reddy ✉; Venkata Reddy Dodda; Ramakrishna Reddy Mule; P. Ramesh Babu; M. Aparna

+ Author & Article Information

AIP Conf. Proc. 3162, 020072 (2025)

https://doi.org/10.1063/5.0242382

In medical image analysis, Brain tumour detection is the most prominent one. Classification of Brain tumorsas tumorous or nontumorous is the primarytask. The existing way to detect tumors is by using Magnetic Resonance Images(MRI). Looking at the MR images directly to detect the tumor results in inaccurate detection of the tumor so we have proposed a system in thisprojectwhichisbasedupon analgorithm from deep learning called Convolutional Neural Network(CNN). Convolutional Neural Networks (CNNs) are a deep learning method for doing image classification. This paper puts forward a model based on convolutional neural networks that detect tumors from MR images of the brain.

Topics

Magnetic resonance, **Convolutional neural network**, **Deep learning**, **Learning and learning models**, **Optical imaging**, **Cancer**, **Neuroanatomy**

REFERENCES

1. S. EDY, W. I, and W.A, "Clinical Characteristics and Histopathology of Brain Tumor at Two Hospitals in Bandar Lampung," *Fac. Med. Lampung Univ.*, vol. 69, pp. 48–56, 2014.
Google Scholar

2. Wadhwa, A. Bhardwaj, and V. Singh Verma, "A review on brain tumor segmentation of MRI images," *Magn. Reson. Imaging*, vol. 61, no. January, pp. 247–259, 2019.

Generalizing Vehicle Manoeuvre Prediction Across Diverse Datasets

Publisher: IEEE Cite This PDF

Marella VenkataRao ; Dodda Venkata Reddy ; S. Siva Nageswara Rao ; Ameen Ul Hassan Khan ; Golla Avinash ; Pendela Chenchu Koushik All Authors

Abstract:
Due to the complex nature of automotive components and sensor data, predictive maintenance is essential to ensure the reliability and safety of the vehicle. This work introduces a new predictive algorithm for automotive engine health, designed as it will provide higher accuracy and faster decisions in detecting potential engine failures, linear Through discriminant analysis, Gaussian naive edges, support vector machines, decision trees, random forests, gradient enhancement, and AdaBoost, the program displays patterns and abnormalities that may indicate impending engine problems.The data set undergoes extensive preprocessing steps such as standardization, handling missing values, and feature engineering to improve model performance. The evaluation criteria used include accuracy, precision, and confusion matrix, with special attention to prevent overfitting through regularization and the early stop method. In the developed model, the group method, especially stacked model 1, obtains impressive results with a model accuracy of 0.99. This high accuracy highlights the effectiveness of the ensemble approach in managing forecasts. The model's ability to deliver real-time analysis and early warning can help significantly reduce maintenance costs, prevent failures, and enhance vehicle safety, resulting in improved vehicle engine health during the maintenance process.

Published in: 2024 International Conference on Emerging Research in Computational Science (ICERCS)

Date of Conference: 12-14 December 2024

DOI: 10.1109/ICERCS63125.2024.10895692

Date Added to IEEE *Xplore*: 27 February 2025

Publisher: IEEE

ISBN Information:

Conference Location: Coimbatore, India

96

Conference Paper

Advanced Machine Learning Approaches for Infant Cry Classification using Audio Feature Extraction

November 2024
DOI:10.1109/ICIICS63763.2024.10859873
Conference: 2024 International Conference on Integrated Intelligence and Communication Systems (ICIICS)

Authors:

Vijay Kumar Nukala | Sathyam Reddy Motheline | John Wesley Kolasanakoti | Sunil Vankayalapati | Venu Velupula | Venkata Reddy Dodda

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96

A Multi-Modality Approach to Breast Cancer Diagnosis: Fusing Ultrasound with Other Imaging Techniques

Publisher: IEEE Cite This PDF

Syed Rizwana ; Shaik Inthiyaz ; Ala Lakshmi Priyanka ; Tirunavalli Mohana ; Shaik Khaja Mohiddin Basha ; Dodda Venkatareddy All Authors

Abstract:
It is the most crucial health issue related to mortality rates among females globally. In relation to that, there have been recent developments in AI and ML to serve better the diagnosis process of breast cancer. The present study hence forth proposed a new way of analzsing the breast using ultrasound imaging with transfer learning and ensemble methods. It integrates cutting edge transfer learning models with advanced ensemble techniques based on Multi-Layer Perceptron's and Support Vector Machines with different kernels. Finally, this system is evaluated, which provides a classification accuracy of 90% and an overall accuracy of 90% with evidence of significant i m provement o v er existing diagnostic systems. It offers a structured procedure covering all steps from handling the input data up to model training and performance evaluation; it, therefore seems to be particularly effective for diagnostics enhancement related to breast cancer.

Published in: 2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)

Date of Conference: 06-08 March 2025
DOI: 10.1109/IATMSI64286.2025.10985453
Date Added to IEEE *Xplore*: 09 May 2025
Publisher: IEEE
ISBN Information:
Conference Location: Gwalior, India

I. Introduction

Ensemble Transfer Learning Strategies focuses on breast cancer as a prime concern for world health. According to the WHO, it became the most common cancer diagnosed in 2020, surpassing even lung cancer, with 2.26 million new cases. It also states as a principal point that early detection forms one of the essential approaches toward establishing better survival outcomes with regard to breast cancer, while drawing attention to the increasing role of AI and DL in enhancing the quality of ultras[illegible] breast cancer. [1] Advanced [illegible] imaging systems, here the techniques of transfer learning and ensemble machine learning are

Authors
Figures
References
Keywords
Metrics

Conference Paper

Harnessing Machine Learning for Improved Heart Disease Prediction

November 2024

DOI:10.1109/UPCON62832.2024.10983291

Conference: 2024 IEEE 11th Uttar Pradesh Section International Conference on Electrical, Electronics and Computer Engineering (UPCON)

Authors:

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98

Conference Paper

Enhanced Lung Cancer Detection Using Deep Learning Ensemble Approach

November 2024
DOI:10.1109/InCoWoCo64194.2024.10863245
Conference: 2024 First International Conference for Women in Computing (InCoWoCo)

Authors:

M. Sireesha **Manvitha Ainavolu** **Naga Revathi Dokku** **Prathima Kasula** **Neelima Yaragani** **Venkatareddy Dodda**

References (15)

Citations (0) References (15)

An ensemble deep learning model for risk stratification of invasive lung adenocarcinoma using thin-slice CT

Article Full-text available

Jul 2023

Jing Zhou · Bin Hu · Wei Feng · Ying Ji

View Show abstract

Deep Learning Techniques to Diagnose Lung Cancer

Article Full-text available

Explainable Fetal Ultrasound Classification with CNN and MLP Models

Publisher: IEEE Cite This PDF

Dodda Venkatareddy ; K.V. Narasimha Reddy ; Yendluri Sowmya ; Yarlagadda Madhavi ; Shaik Chand Asmi ; Sireesha Moturi All Authors

Abstract:
Artificial Intelligence has greatly influenced healthcare, most particularly in medical imaging. This paper represents a review in large form that classifies fetal ultrasound images with the use of convolutional neural networks and multi-Layer Perceptrons. While CNN is very good at spatial feature extraction in image classification, their lack of interpretability presents challenges toward applications in health. In this regard, we include methods of Explainable AI (XAI), more precisely Local Interpre table Model-Agnostic Explanations (LIME), for giving more transparency and confidence in the decision-making process of such models. The research here utilizes 12,400 fetal ultrasound images, which were classified under six anatomical structures. The CNN and MLP models showed very promising classification performances of 93.24% and 91.17%, respectively. LIME was implemented to interpret model predictions and to more clearly identify factors contributing to the classification. The results also show that explainability enhances not only trust in AI-based diagnostics but also model reliability in clinical settings.

Published in: 2024 First International Conference on Innovations in Communications, Electrical and Computer Engineering (ICICEC)

Date of Conference: 24-25 October 2024

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Date Added to IEEE *Xplore*: 30 December 2024

Publisher: IEEE

ISBN Information:

Conference Location: Davangere, India

I. Introduction

Over the years, artificial intelligence (AI) has taken a significant role in changing the healthcare scene, especially in medical imaging. Deep learning has been one of the many AI methods but has become the one that healthcare workers can use to make diagnoses and tr[illegible]ccurate. The main thing that makes

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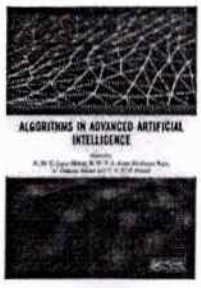
Figures

References

Keywords

Metrics

Chapter



Web-Based Early Stroke Detection: A Machine Learning Approach with Explainabie Insights

By Kunda Suresh Babu (/search?contributorName=Kunda Suresh Babu&contributorRole=author&redirectFromPDP=true&context=ubx), Mahesh Babu Parchuri (/search?contributorName=Mahesh Babu Parchuri&contributorRole=author&redirectFromPDP=true&context=ubx), Aswiniduth Muthireddy (/search?contributorName=Aswiniduth Muthireddy&contributorRole=author&redirectFromPDP=true&context=ubx), Lakshmi Vara Prasad Gurram (/search?contributorName=Lakshmi Vara Prasad Gurram&contributorRole=author&redirectFromPDP=true&context=ubx), Naveen Satya Thallam (/search?contributorName=Naveen Satya Thallam&contributorRole=author&redirectFromPDP=true&context=ubx), Shaik Khaja Mohiddin Basha (/search?contributorName=Shaik Khaja Mohiddin Basha&contributorRole=author&redirectFromPDP=true&context=ubx), Sireesha Moturi (/search?contributorName=Sireesha Moturi&contributorRole=author&redirectFromPDP=true&context=ubx)

Book Algorithms in Advanced Artificial Intelligence (https://www.taylorfrancis.com/books/mono/10.1201/9781003641537/algorithms-advanced-artificial-intelligence?refId=70b119f0-b1a5-4c68-a01e-294fe172155e&context=ubx)

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Pages	8
eBook ISBN	9781003641537

ABSTRACT

< Previous Chapter (chapters/edit/10.1201/9781003641537-13/secure-private-cloud-storage-sharing-services-jetson-orin-nano-srinivasarao-leelavathy-gedela-sriveni-kolamuri-sai-praveen-subrhamanya-karthik-sontyana-jagan?context=ubx)

Next Chapter > (chapters/edit/10.1201/9781003641537-15/optimizing-real-time-intrusion-detection-enhanced-network-security-madhuri-tamilkodi-katari-meghana-gonna-amrutha-sada-surendra-madasi-sri-hari?context=ubx)

Leveraging Deep Learning for Enhanced Pneumonia Detection in Chest X-Ray

Publisher: IEEE Cite This PDF

Shaik Khaja Mohiddin Basha ; Pogula Sai Sri Varsha ; Sankuru Sai Latha ; Vemula Sireesha ; Syed Rizwana **All Authors**

Abstract:
Early detection of pneumonia and acute respiratory infections caused by viruses and bacteria is critical for effe treatment and prevention of serious complications. Advanced technologies, especially AI and Deep learning, h proven valuable in enhancing this process. Our study introduces the Deep CNN (Convolutional Neural Networ Algorithm, a modified deep convolutional neural network A model using chest X-rays to predict pneumonia in i groups and uninfected groups by preprocessing. Using a dataset of 5,855 segmented images enhanced by da augmentation techniques, Deep CNN achieved a high classification accuracy of 91.46% for unseen images. T performance outperforms traditional models such as ImageNet, DenseNet, and VGG16, providing a model for diagnosis of lung disease. Demonstrating high potential, the Deep CNN model represents a major advance in imaging technology, providing a reliable tool for early diagnosis and guiding treatment strategies. Its high accu highlights the potential of AI-driven processes to transform healthcare, improve patient outcomes, and support effective and timely treatment.

Published in: 2024 First International Conference on Innovations in Communications, Electrical and Compute Engineering (ICICEC)

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Conference Location: Davangere, India

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An Improved and More Effective FSPC-Based Cloud Consumer Legality Process for Protected Data

| Conference paper | First Online: 01 February 2025

| pp 413–424 | Cite this conference paper

Computing, Communication and Learning

(CoCoLe 2024)

D. Priyanka, P. Anjaneyulu, K. Lakshmi Nadh & S. K. Khaja Mohiddin Basha

Part of the book series: Communications in Computer and Information Science ((CCIS,volume 2317))

Included in the following conference series: International Conference on Computing, Communication and Learning

Abstract

In the contemporary age of cloud computing, a vast array of resources in the type of services is provided to the cloud clients upon demand to increase process output

Intelligent Heart Rate Classification with Adaptive Neuro-Fuzzy Inference System Approach

Publisher: IEEE Cite This PDF

Banothu Seva ; Bhupchand Kumhar ; Jyoti Gupta ; Sharda Patel ; Shaik Khaja Mohiddin Basha ; Archi Jain **All Authors**

Abstract:
The human heart is considered among the most crucial internal organs found in the body. An ECG signal is defined as the widespread name given to any electrical signal that is generated by the circulatory system*. By using the ECG signal, one can estimate anomalies present in a heart. This study is aimed at grouping the electrocardiogram (ECG) signals, and thereby using an adaptive neuro fuzzy inference system (ANFIS) algorithm. In this study, the ANFIS which is associated with the back propagation approach is used in order to perform the categorising task. ANFIS can be developed from the integration of fuzzy logic which is a qualitative technique with the neural network aspect in allowing adaptability. Attribute selection is done before the classification exercise is conducted. Four different types of ECG beats can be retrieved from the datasets available at PhysioBank. Classification of the cardiac signals is done employing four ANFIS classifiers. The fifth ANFIS decoder is used to get a higher discrimination ratio in order to classify the electrocardiograms accurately.

Published in: 2024 IEEE 4th International Conference on ICT in Business Industry & Government (ICTBIG)

Date of Conference: 13-14 December 2024

DOI: 10.1109/ICTBIG64922.2024.10911734

Date Added to IEEE *Xplore*: 13 March 2025

Publisher: IEEE

ISBN Information:

Conference Location: Indore, India

Early Diagnosis of Lung Cancer Using Hyperparameter-Tuned Machine Learning Models

Publisher: IEEE Cite This PDF

Shaik Khaja Mohiddin Basha ; Syed Rizwana ; Gottimukkala Sasank Chandra ; Gudi Manikanta ; Bukya Venkata Sai Durga Naik ; Venkata Reddy Dodda

All Authors

Abstract:
Globally, lung cancer is the leading cause of cancer-related deaths. Improving survival depends on early and precise identification, which is still mostly accomplished using antiquated techniques that are frequently ineffective and erroneous. In this study, we used patient demographic and clinical data to create a machine learning-based risk prediction model that aims to diagnose lung cancer early and accurately. To verify the performance on our lung cancer data set, we employed important machine learning algorithms such as logistic regression, random forest, and support vector machines (SVM). PCA for feature selection, resampling to balance classes, and handling missing values were all examples of preprocessing. Among models, Random Forest shown excellent efficiency in risk detection, while SVM ultimately.

Published in: 2024 International Conference on Integrated Intelligence and Communication Systems (ICIICS)

Date of Conference: 22-23 November 2024

DOI: 10.1109/ICIICS63763.2024.10859881

Date Added to IEEE *Xplore*: 05 February 2025

Publisher: IEEE

ISBN Information:

Conference Location: Kalaburagi, India

Conference Paper

Computer Aided Detection of Breast Cancer Using Bio Inspired Algorithm

March 2025
DOI:10.1109/IATMSI64286.2025.10985427
Conference: 2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)

Authors:

Syed Rizwana · Peddi Kavya · Bolla Vinay Pooja · Bandi Poojitha · Shaik Khaja Mohiddin Basha · Dodda Venkatareddy

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A Multi-Modality Approach to Breast Cancer Diagnosis: Fusing Ultrasound with Other Imaging Techniques

Publisher: IEEE Cite This PDF

Syed Rizwana ; Shaik Inthiyaz ; Ala Lakshmi Priyanka ; Tirunavalli Mohana ; Shaik Khaja Mohiddin Basha ; Dodda Venkatareddy All Authors

Abstract:
It is the most crucial health issue related to mortality rates among females globally. In relation to that, there have been recent developments in AI and ML to serve better the diagnosis process of breast cancer. The present study hence forth proposed a new way of analzsing the breast using ultrasound imaging with transfer learning and ensemble methods. It integrates cutting edge transfer learning models with advanced ensemble techniques based on Multi-Layer Perceptron's and Support Vector Machines with different kernels. Finally, this system is evaluated, which provides a classification accuracy of 90% and an overall accuracy of 90% with evidence of significant i m provement o v er existing diagnostic systems. It offers a structured procedure covering all steps from handling the input data up to model training and performance evaluation; it, therefore seems to be particularly effective for diagnostics enhancement related to breast cancer.

Published In: 2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)

Date of Conference: 06-08 March 2025

DOI: 10.1109/IATMSI64286.2025.10985453

Date Added to IEEE *Xplore*: 09 May 2025

Publisher: IEEE

ISBN Information:

Conference Location: Gwalior, India

I. Introduction

Ensemble Transfer Learning Strategies focuses on breast cancer as a prime concern for world health. According to the WHO, it became the most common cancer diagnosed in 2020, surpassing even lung cancer, with 2.26 million new cases. It also states as a principal point that early detection forms one of the essential approaches toward establishing better survival outcomes with regard to breast cancer, while drawing attention to the increasing role of AI and DL in enhancing the quality of ultra[illegible] breast cancer. [1] Advanced ultrasound imaging systems, [illegible] and ensemble models of machine learning are

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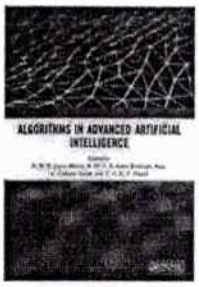
Chapter



Thyroid Disease Identification Using Machine Learning

By G. Saranya (/search?contributorName=G. Saranya&contributorRole=author&redirectFromPDP=true&context=ubx), K. Suresh Babu (/search?contributorName=K. Suresh Babu&contributorRole=author&redirectFromPDP=true&context=ubx), M. Sireesha (/search?contributorName=M. Sireesha&contributorRole=author&redirectFromPDP=true&context=ubx), G. Anuradha (/search?contributorName=G. Anuradha&contributorRole=author&redirectFromPDP=true&context=ubx), K. Chandrika (/search?contributorName=K. Chandrika&contributorRole=author&redirectFromPDP=true&context=ubx), Y. Keerthi (/search?contributorName=Y. Keerthi&contributorRole=author&redirectFromPDP=true&context=ubx)

Book Algorithms in Advanced Artificial Intelligence (https://www.taylorfrancis.com/books/mono/10.1201/9781003641537/algorithms-advanced-artificial-intelligence?refId=8da281f3-f232-4fa5-8c8c-8d79231ab344&context=ubx)

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ABSTRACT

< Previous Chapter (chapters/edit/10.1201/9781003641537-10/quality-improvement-mechanism-routing-using-throw-boxes-dtn-deepak-nedunuri-ch-ramadevi-satyanarayana-ch-madhava-rao?context=ubx)

Next Chapter > (chapters/edit/10.1201/9781003641537-12/polycystic-kidney-disease-identification-harnessing-deep-neural-networks-accurate-diagnosis-ritha-yugandhar-bokka-dileep-kumar-kadali-narayana-durga-rao-rambabu?context=ubx)

Optimized Deep Learning for Multi-Class Retinal Disease Classification Using ResNet-101

Publisher: IEEE Cite This PDF

Kunda Suresh Babu ; G. Saranya ; Kattiri. Santhoshkumar ; Talari Babu ; M.Venkata Thirumala ; Dodda Venkatareddy **All Authors**

Abstract:

Machine Learning (ML) approaches, such as Artificial Neural Networks (ANN), Recurrent Neural Networks (RN Deep Learning and advanced architectures like AlexNet and ResNet, are at the leading edge of studies in the identification and type of crucial sicknesses. These techniques leverage the strength of records-driven models research complex scientific data, main to more correct and efficient diagnostic processes. This work suggests ResNet-101 model that is meant to handle multiclass classification problems, offering potentially higher accura deeper feature extraction at the cost of increased memory consumption and computational requirements. The 101 model was tested using the EyeNet dataset, which included 32 distinct types of diseases of the retina. The achieved accuracy of 98.75% when evaluated on the EyeNet dataset.

Published in: 2024 First International Conference for Women in Computing (InCoWoCo)

Date of Conference: 14-15 November 2024

DOI: 10.1109/InCoWoCo64194.2024.10863808

Date Added to IEEE *Xplore*: 06 February 2025

Publisher: IEEE

ISBN Information:

Conference Location: Pune, India

Automated Chest X-Ray Diagnosis with Deep Ensemble Models: A Focus on COVID-19 and Pneumonia Detection

Publisher: IEEE Cite This PDF

S V N Sreenivasu ; Shaik Hafija ; Kanneganti Navya ; Gorantla Gayathri ; Sunkireddy Madhavi ; Marella Venkat Rao **All Authors**

Abstract:
This research involved a detailed study introducing a combo model that would be used for both diagnosing Covid-19 and pneumonia using chest X-ray images. In tests, known for being time-consuming, costly, and sometimes inaccurate, are addressed by this method (RT-PCR). It is commenced by the preprocessing part where images are modified to input shape as well as some data augmentation techniques such as zoom, rotation, and flipping to provide the dataset enough enhancement for the best training result. We use transfer learning to extract deep features using pre-trained VGG16, DenseNet201 and Efficient NetB0 models. The features extracted are then used as input to the fully connected layers and ensemble classifiers, where they classify conditions by probability scores. In their evaluation, they included a chest X-rays dataset where the proposed approach managed to get an impressive 98.5% accuracy rate. And it showed good precision, recall and F1 score with 95%,96% and 95%. The current method is the best time, recall, F1-score, and overall accuracy of the existing ones. In short, this deep ensemble approach is pretty good for diagnosing Covid-19 and pneumonia and is reflected in the hospital treatment of maestros who are cautious in the treatment that they do, and care what is best for their patients.

Published in: 2024 2nd International Conference on Signal Processing, Communication, Power and Embedded System (SCOPES)

Date of Conference: 19-21 December 2024

DOI: 10.1109/SCOPES64467.2024.10991921

Date Added to IEEE *Xplore*: 16 May 2025

Publisher: IEEE

ISBN Information:

Conference Location: Paralakhemundi Campus, Centurion University of Technology and Management, Odisha., India

Classification of Music Genre Using Deep Learning Approaches

Publisher: IEEE Cite This PDF

U. Mohan Srinivas ; Shaik Rafi ; Tinnavalli Venkata Manohar ; M. Venkat Rao **All Authors**

Abstract:
Music genre classification is a pivotal area of research within audio technology, holding immense importance f content organization and recommendation. Audio feature extraction and Music genre classification constitute a complete recognition system. Audio feature analysis and Music genre classification together form an integrate recognition system for comprehensive music genre identification and organization. This technology is frequent to accurately detect and classify various types of music genres or characteristics present in audio signals, cont significantly to the effective organization and recommendation of music content. Our experiment was conducte the dataset from GTZAN that is taken from Kaggle repository. Convolutional neural networks (CNN) are emplo train our model, which is subsequently utilized for the classification of music genres in audio signals.

Published in: 2024 4th International Conference on Artificial Intelligence and Signal Processing (AISP)

Date of Conference: 26-28 October 2024

DOI: 10.1109/AISP61711.2024.10870721

Date Added to IEEE *Xplore*: 12 February 2025

Publisher: IEEE

ISBN Information:

Conference Location: VIJAYAWADA, India

ISSN Information:

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Figures

References

Optimizing the Powerhouse: Fine-Tuning CNNs for Superior Lung Disorder Detection

Publisher: IEEE Cite This PDF

Rama Krishna Eluri ; Pentyala Tanuja ; M. Venkat Rao ; Vutla Lavanya ; M. Mokshagna **All Authors**

Abstract:
Present work involves the use of deep learning models, in particular, Convolutional Neural Networks, to detect diseases of the lungs such as pneumonia, tuberculosis, and lung cancer through the analysis of chest X-ray a scan images. CNN has emerged as a robust tool for the analysis of medical images due to their natural ability automatically extract hierarchical features, hence making them ideal for complicated tasks such as disease de Well-known architectures in this work are VGG16 and VGG19; they are combined with specially designed seq and functional models to solve this task of recognizing those diseases. These models are trained on open-sou that will provide the model with real-world medical images for it to learn from diverse cases of lung abnormaliti important enhancement in pursuit of model performance and robustness in this work is the employment of augmentation techniques. Since, in most cases, labeled medical data comes in a limited amount, augmentatio important way of artificially increasing the effective size of the training set to allow the models to generalize be unseen data. The images were rescaled, shear transformed, and flipped horizontally to simulate different orie and variations that can arise during real-world X-ray and CT scans. This will also make the models less sensiti changes in orientation, scale, or noise of an image and enhance their capability of detecting diseases more pr different datasets. The results of the study show that early detection by deep learning models has improved a incorporating advanced CNN architectures and augmentation strategies. Those customized sequential and fu models performed very well, especially in the classification of lung diseases with very high precision. This is in important for early diagnosis because early identification of diseases like pneumonia, tuberculosis, and lung c lead to better tre...

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DOI: 10.1109/ICICEC62498.2024.10808691

Date Added to IEEE *Xplore*: 30 December 2024

Publisher: IEEE

ISBN Information:

Conference Location: Davangere, India

Generalizing Vehicle Manoeuvre Prediction Across Diverse Datasets

Publisher: IEEE Cite This PDF

Marella VenkataRao ; Dodda Venkata Reddy ; S. Siva Nageswara Rao ; Ameen Ul Hassan Khan ; Golla Avinash ; Pendela Chenchu Koushik All Authors

Abstract:
Due to the complex nature of automotive components and sensor data, predictive maintenance is essential to ensure the reliability and safety of the vehicle. This work introduces a new predictive algorithm for automotive engine health, designed as it will provide higher accuracy and faster decisions in detecting potential engine failures, linear Through discriminant analysis, Gaussian naive edges, support vector machines, decision trees, random forests, gradient enhancement, and AdaBoost, the program displays patterns and abnormalities that may indicate impending engine problems.The data set undergoes extensive preprocessing steps such as standardization, handling missing values, and feature engineering to improve model performance. The evaluation criteria used include accuracy, precision, and confusion matrix, with special attention to prevent overfitting through regularization and the early stop method. In the developed model, the group method, especially stacked model 1, obtains impressive results with a model accuracy of 0.99. This high accuracy highlights the effectiveness of the ensemble approach in managing forecasts. The model's ability to deliver real-time analysis and early warning can help significantly reduce maintenance costs, prevent failures, and enhance vehicle safety, resulting in improved vehicle engine health during the maintenance process.

Published in: 2024 International Conference on Emerging Research in Computational Science (ICERCS)

Date of Conference: 12-14 December 2024

DOI: 10.1109/ICERCS63125.2024.10895692

Date Added to IEEE *Xplore*: 27 February 2025

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ISBN Information:

Conference Location: Coimbatore, India

Conference Paper

Beyond Parental Height: A Multi-Model Deep Learning Approach for Personalized Adult Height Prediction

March 2025

DOI:10.1109/IATMSI64286.2025.10985098

Conference: 2025 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI)

Authors:

S. Siva Nageswara Rao | **Siva Nagendra Akurathi** | **Guntur Gowtham** | **Challa Ravi Sankar** | **Marella Venkata Rao**

Implementation of Heart Disease Prediction Using PCA Classification Algorithm

Publisher: IEEE

V. Anusha Rao ; Surendra ... All Authors

Abstract:
Heart disease and stroke are the two leading causes of death worldwide, accounting for one in every four deaths in India. These diseases are the main causes of death in this country. Based on data from the World Health Organization (WHO), cardiovascular disease causes around 24% of non-communicable illness-related deaths in India. The primary cause of these deaths is Heart disease or Coronary Artery Disease (CVD). Furthermore, in industrialized countries such as the United States of America and other rich nations, coronary heart disease is the primary cause of death. Every year almost 17 million people worldwide pass away from cardiovascular disease. Asia has the highest death rate from cardiovascular disease, making it the leading cause of death worldwide. Prediction of heart disease is done by many traditional methods, these methods are time-consuming and not accurate. Therefore, to overcome these issues, Principle of Component Analysis (PCA) is used in this analysis.

Published in: ... International Conference on Artificial Intelligence and Signal Processing (AISP)

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Publisher: IEEE

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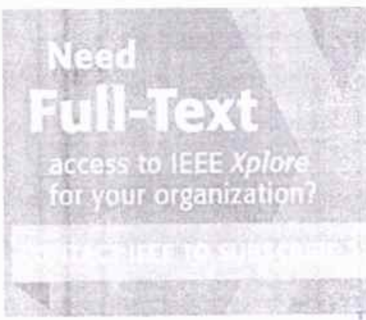

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Int. J. Sens. Wirel. Commun. Control, xxxx, xx, x-x

RESEARCH ARTICLE

Outage Analysis of IRS-NOMA System over $\eta - \mu$ Fading Channel

K. Srinivasarao[1,*], V. Venkata Rao[1,*] and Priyank Sharma[2]

[1]*Department of Electronics and Communication Engineering, Narasaraopeta Engineering College (Autonomous), Narasaraopeta – India;* [2]*Central University Jammu – India*

ARTICLE HISTORY

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Abstract: ***Background:*** Intelligent reflecting surfaces (IRS) have evolved as one of the key technologies by enabling reconfigurable, intelligent, and low-power solutions for sixth-generation (6G) wireless communication.

Objective: The objective of this paper is to improve outage performance by deploying the IRS Module.

Method: In this research, an IRS-assisted NOMA network is explored over $\eta - \mu$ fading channel, where the IRS is placed on top of the base station (BS). IRS aids in fine-tuning the phase of incoming signals from BS in a meticulous way, which improves the performance of the system. The statistical channel modelling of the downlink IRS-NOMA system is proposed and validated with Monte Carlo (MC) simulation. Also, analytical expressions of OP are derived for k^{th} user in the IRS-NOMA system over $\eta - \mu$-fading channel.

Result: Furthermore, the influence of performance factors, such as the number of reflecting elements (M) on OP, is examined.

Conclusion: Simulation results reveal that the IRS-NOMA system experiences less outage compared to IRS-OMA and conventional relaying techniques.

Keywords: Intelligent reflecting surfaces (IRS), $\eta - \mu$ fading channel, Outage probability (OP), NOMA.

1. INTRODUCTION

The advent of fifth-generation (5G) and beyond wireless communication (WC) systems has raised significant concerns regarding massive connectivity, spectrum utilization, and high data rates. With the current deployment of 5G new radio (NR) standards, researchers are actively exploring key technologies for the next generation of wireless communication sixth-generation (6G) WC [1-3]. Recently, non-orthogonal multiple access (NOMA) has been identified as a key technology that enables more users to transmit information within the same frequency band at various power levels. This allows for better spectrum utilization, supporting a greater number of users, as discussed in previous studies [4-8]. In previous studies [9-12], NOMA was integrated with cooperative communication to enhance the overall user experience. Subsequently, in other studies [13, 14], the Outage Probability (OP) and sum rate of full-duplex NOMA-based cooperative systems were analysed to improve Quality of Service (QoS) over Rayleigh and Nakagami-m fading channels, respectively. Furthermore, the OP and ergodic behavior of Amplify-and-Forward (AF)-based NOMA networks were investigated over Nakagami-m in other studies [15-16]. In another research [17], the probability density function (PDF) and cumulative distribution function (CDF) of the sum of α-μ variates were approximated by a weighted sum of a few similar α-μ distributions, analysing a MIMO system. Moreover, an OSTBC-MIMO system was analyzed over α-μ fading environment. Analytical expressions of the OP, Bit Error Rate (BER), and ergodic capacity were derived. Generalized Fisher (GF) distribution was proposed for modelling shadowed fading channels for millimeter-wave spectrum in a different study [18]. Further, intelligent reflecting surfaces (IRS) have been identified as a key technique for 5G and beyond WC in light of recent attention [19, 20]. Unlike existing relay protocols [10, 11], the IRS module has the capability of self-tuning, which controls the phase of the incident radio frequency (RF) signal, thereby improving the signal strength at the receiver side [21, 22]. Further, to improve the reliability of the WC system, the IRS was integrated with other existing technologies, namely NOMA and SWIPT in previous studies [23-24]. In other studies [25-29], an IRS-assisted NOMA system was introduced to further enhance the spectrum with desired (QoS) for 6G communi-

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Original research paper

Energy Efficient Design and Implementation of Approximate Adder for Image Processing Applications

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Abstract: Approximate computing is a new technique that promises to speed up computations while preserving a level of precision suitable for error-tolerant systems such as neural networks and graphics. At the edge, a lot of computationally complex methods are now in use. As such, designing quick and low-energy circuits is crucial. This work presents a novel approximate full adder approach that lowers power consumption and delay at the expense of some output mistakes. To achieve these objectives, the proposed full adder architecture makes use of fundamental gate logic reduction techniques. Evaluations based on the Intel FPGA synthesis tool indicate that the suggested adder surpasses state-of-the-art techniques in terms of power, speed, and propagation delay. The design parameters – area, power dissipation, and latent characteristics of proposed adder are verified by simulation using EDA tools. The results demonstrate that our proposed approximate adder runs faster and requires fewer logic components than earlier equivalent systems. The synthesis reports testify to the fact that compared to other adders currently in use, the suggested adder used less logic elements. Furthermore, suggested approximation adders were used to execute image additions. Using image addition, the image quantitative statistics are used to application-level accuracy metrics analysis. Quantitative results confirm the superior functioning of the full adder cell approximation over comparable models.

Keywords: FPGA, Image Processing, Adder Design, Image Addition, Approximate Computing.

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SN

ORIGINAL RESEARCH

A Crossbreed and Powerful Machine Learning Archetype for Unparalleled Safety and Effectiveness in Wireless Sensor Networks

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Abstract

When a Wireless Sensor Network successfully executes a transaction within a finite timeframe and with minimal resource consumption, it is deemed active and operational. The underlying challenge in all scenarios boils down to a common issue as Denial of Service. This challenge encompasses endeavours to enhance the enforcement of consumption and routing policies, striving for improved security and reliability. In this study, we leverage a machine learning approach, utilizing a covariance vector derived from eigenvalues to identify anomalous behaviour in nodes. The CDS parameter of each node proves pivotal in adapting the selection policy to the current conditions, guiding a suitable course of action. Decision values for likelihoods are dynamically adjusted, serving as either rewards or punishments based on prior actions. A real-time payment function is established as a reward mechanism, contingent on the action taken and its utility, such as whether a forwarded packet was dropped or delayed. At the second level, the same learning model is employed to discern between malicious and benign nodes. The proposed method showcases a notable enhancement, including a 98% improvement in Packet Delivery Ratio (%), 84% reduction in delay (seconds), 93.2% decrease in jitter (seconds), and an 86% boost in Goodput (Kilobits per second). These substantial improvements validate the efficacy of the proposed method when compared to existing methodologies employed in the same research context.

Keywords WSN · DoS · Traffic flow · Traffic variance

Introduction

WSN is currently the service that is utilized most frequently in commercial and industrial applications. This is the case because technological breakthroughs have been made in the areas of processing, connectivity, and the power consumption of embedded computing devices. The nodes that are used to monitor environmental elements include

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IOT-BASED GREENHOUSE MONITORING AND CONTROL SYSTEM FOR SMART AGRICULTURE

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ABSTRACT

This project is to design and implementation of an IoT-enabled Greenhouse Monitoring and Control System, employing an Arduino microcontroller and the firebase real time database protocol to optimize plant growth conditions. The system continuously monitors environmental factors—CO_2 concentration, temperature, humidity, soil moisture, and light intensity—using sensors like MQ-135, DHT11, and soil moisture sensors, while actuators such as a CPU fan, relay-controlled water pump, and buzzer maintain ideal settings. A key ecological feature involves extracting CO_2-rich air from the greenhouse and redirecting it to forested areas, facilitated by firebase real time database based communication, to lower carbon levels and enhance sustainability.

Keywords: Greenhouse Monitoring, Internet of Things (IoT), Arduino, firebase real time database

I.INTRODUCTION

The rising global emphasis on sustainable agriculture and the urgent need to mitigate climate change have driven the adoption of advanced technologies, such as the Internet of Things (IoT), in modern farming practices, particularly within greenhouse systems. Greenhouses provide a controlled environment to optimize plant growth by managing critical parameters like temperature, humidity, soil moisture, and carbon dioxide (CO_2) levels; yet, maintaining these conditions effectively poses significant challenges. Traditional approaches to greenhouse management often depend on labor-intensive manual monitoring or basic automated systems that lack real-time responsiveness, scalability, and environmental integration. To address these shortcomings, this research introduces an innovative Arduino-based Greenhouse Monitoring and Control System, enhanced with IoT capabilities and the firebase real time database protocol for streamlined data communication. The system incorporates a diverse array of sensors—including the MQ-135 for detecting CO_2 and other harmful gases, DHT11 for tracking temperature and humidity, soil moisture sensors for irrigation needs, and LDR for light intensity assessment—alongside actuators like a CPU fan, relay-controlled water pump, and buzzer to actively regulate the greenhouse environment. A distinctive ecological feature of this design is its ability to capture CO_2-rich air from the greenhouse and redirect it to forested areas through firebase real time database -driven mechanisms, reducing greenhouse gas levels while supporting carbon sequestration and sustainability efforts. Utilizing the NodeMCU (ESP8266) microcontroller, the system transmits real-time data to cloud-based IoT platforms such as Blynk and ThingSpeak, facilitating remote monitoring, control, and data visualization via mobile or web interfaces. This integration enhances operational efficiency, improves accessibility for users, and aligns with broader sustainability objectives by promoting energy-efficient and environmentally conscious practices. By merging IoT technology with a focus on ecological benefits, this project offers a scalable, cost-effective solution that advances precision agriculture, optimizes crop health, and supports climate-adaptive farming. It represents a meaningful contribution to the evolution of smart agriculture, laying the groundwork for future innovations in greenhouse management and sustainable food production systems.

efficiency and user accessibility. Furthermore, it explores the application of this system in precision agriculture, automated irrigation, and climate-adaptive farming, offering a cost-effective and sustainable framework for modern greenhouse management. Through this work, the paper seeks to contribute to the growing body of knowledge on smart agriculture, highlighting the potential of IoT technologies to bridge technological innovation with environmental stewardship, and providing a foundation for future advancements in sustainable farming practices.

II. LITERATURE REVIEW

[1] Rayhana, Xiao, and Liu reviewed the current greenhouse cultivation technologies and the state-of-the-art of IoT technologies for smart greenhouse farms. Their paper highlights the major challenges that need to be addressed in greenhouse farming. The rapid change of climate, population explosion and reduction of arable lands are calling for new approaches to ensure sustainable agriculture and food supply for the future, and greenhouse agriculture is considered to be a viable alternative and sustainable solution. The evolving Internet of Things (IoT)

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Facial Emotion Recognition from Video using Machine Learning

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KEYWORDS

Deep learning-based approach, Facial features, Convolutional Neural Networks, human-computer interaction

ABSTRACT

Emotion detection from facial images is a crucial task in computer vision and human-computer interaction. This study aims to develop a machine learning and deep learning-based approach for recognizing emotions from facial expressions using MATLAB. The proposed system employs image preprocessing techniques, feature extraction methods, and classification models such as convolutional neural networks (CNNs) to accurately categorize emotions like happiness, sadness, anger, surprise, and more. The dataset is preprocessed to enhance facial features, and deep learning techniques are utilized to achieve high accuracy in emotion classification. The system's performance is evaluated using standard benchmark datasets, and results indicate its effectiveness in real-world applications such as sentiment analysis, mental health monitoring, and human-computer interaction.

1. INTRODUCTION

In the rapidly evolving landscape of machine learning, the application of deep neural networks has revolutionized various domains, offering remarkable capabilities in tasks ranging from image analysis to natural language processing. One compelling area where these advancements find significant potential is in the field of facial emotion detection. The ability to discern human emotions from facial expressions holds profound implications for diverse sectors, including psychology, healthcare, and even driver safety.

Deep neural networks are now the state-of-the-art machine learning models across a variety of areas, from image analysis to natural language processing, and widely deployed in academia and industry. These developments have a huge potential for medical imaging technology, medical data analysis, medical diagnostics and healthcare in general, slowly being realized. We

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Flood Detection and Warning System Using IoT

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KEYWORDS

Smart Flood Detection, Soil moisture, IoT Technology

ABSTRACT

This project presents a Smart Flood Detection and Warning System using IoT to monitor environmental conditions like water levels, rainfall, and soil moisture in real time. Data is analyzed using advanced algorithms to assess flood risks and issue early warnings via SMS, mobile apps, and alarms. The system improves flood risk management by enabling timely responses, making it scalable, cost-effective, and adaptable for disaster resilience and sustainable urban planning. Floods are among the most devastating natural disasters, causing significant loss of life, property, and infrastructure. Traditional flood monitoring systems often lack real-time data and fail to provide timely warnings. To address this issue, this project proposes a Smart Flood Detection and Warning System leveraging IoT technology. The system employs an array of sensors, including water level, rainfall, and soil moisture sensors, to monitor environmental conditions in real time

1. INTRODUCTION

Among all noticed characteristic dangers, water-related catastrophes are the most successive and posture significant dangers to individuals and financial advancement [1, 2]. [2] Additionally hearsay that, water-oriented catastrophes represent regarding 72% of the complete monetary harms brought about by cataclysmic events, out of which 26% of the multitude of harms are credited to floods. These misfortunes are required to raise later on because of environmental revolutionization, land use amend, deforestation, mounting ocean echelons, and populace development in flood-inclined territories, making the quantity of individuals weak flood fiascos around the world to increment to two billion by 2050 [2- 4].Development of ideal flood gauging and practical flood hazard the executives frameworks have been upheld as proportions of flood readiness [5, 6] for an assortment of reasons. Because of the vulnerabilities encompassing the greatness, timing and spot of event, topographical degree, and geo-physical connections of inundations, it is regularly impractical to totally manage them.

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Natural Language Processing for Neonatal Healthcare: Automating Clinical Decision Support and Diagnostic Insights

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ABSTRACT

This study investigates the application of Natural Language Processing (NLP) within the specialized domain of neonatal healthcare, addressing the critical need for enhanced clinical decision support. The primary aim is to automate the extraction of diagnostic insights from the substantial volume of unstructured data contained within electronic health records (EHRs) and other clinical documentation. Neonatal care is characterized by the urgency of decision-making and the vulnerability of patients, making the need for timely and accurate information paramount. The research acknowledges the challenges faced by clinicians in neonatal intensive care units (NICUs), who are often required to process large amounts of complex information rapidly. The study explores the potential of NLP to alleviate these challenges by transforming unstructured clinical text into actionable, structured data. The methodology involves the application of pre-trained biomedical language models, specifically BioBERT and ClinicalBERT, to perform key NLP tasks. These tasks include named entity recognition (NER), which is used to identify critical clinical entities within the text, and classification, which aids in categorizing patient risk. The efficacy of these models is evaluated using a dataset of anonymized neonatal clinical records. The results of the study demonstrate the promise of NLP in enhancing the efficiency and accuracy of neonatal diagnostics. The NLP-driven system shows potential for reducing the time required for diagnosis and improving the identification of critical conditions. However, the study also acknowledges existing challenges. These include the need for improved model interpretability, the handling of variability in clinical text, and the effective integration of NLP tools into clinical workflows. In conclusion, the study positions NLP as a valuable tool for advancing neonatal healthcare by extracting meaningful insights from clinical documentation. The findings support the continued development and refinement of NLP applications to address the unique challenges of this critical medical field.

Keywords: *Natural Language Processing (NLP), neonatal healthcare, clinical decision support systems (CDSS), electronic health records (EHR), BioBERT, ClinicalBERT, named entity recognition, classification, diagnostic insights.*

1. INTRODUCTION

Neonatal healthcare presents one of the most complex and critical domains in modern medicine, where clinical decisions often need to be made within minutes to prevent life-threatening consequences(Bobba et al., 2023). Newborns, especially those in neonatal intensive care units (NICUs), are highly vulnerable due to their underdeveloped physiological systems and inability to communicate symptoms(Joaquim et al., 2024). Conditions such as neonatal sepsis, respiratory distress, and congenital abnormalities require rapid, accurate diagnosis and timely intervention. However, clinicians are often

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High-performance sentiment classification of product reviews using GPU(parallel)-optimized ensembled methods

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Abstract

Sentiment analysis is an important approach in natural language processing (NLP) that extracts information from text to infer underlying emotions or views. This technique entails classifying textual information into feelings like "positive," "negative," or "neutral." By evaluating data and labeling, client input may be classified on scales such as "good," "better," "best," or "bad," "worse," resulting in a sentiment classification. With the fast expansion of the World Wide Web, a massive library of user-generated data—opinions, thoughts, and reviews—has evolved, notably for diverse items. E-commerce firms use this data to gather attitudes and views from social media sites like Facebook, Twitter, Amazon, and Flipkart. The GPU-CUDA-ENSEMBLED algorithm is a GPU-accelerated method for sentiment classification, enhancing predictive performance by minimizing variances and biases. It outperforms existing algorithms like SLIQ and MMDBM, demonstrating GPU mining's efficiency. The proposed algorithm utilizes GPU-accelerated sentiment analysis to accurately predict smartphone ratings, providing valuable insights for businesses to maximize customer feedback potential.

Keywords:
GCE;
Graphics Processing Unit (GPU);
MMDBM;
SLIQ;
Smartphone Reviews;

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INTRODUCTION

Knowing what customers think is of at utmost importance to companies seeking to measure consumer satisfaction and adjust what they provide accordingly. Especially algorithms like GPU-CUDA-ENSEMBLED that employ computational operations to help speed up sentiment analysis and lead to better insights. Conventional algorithms underpinning traditional sentiment analysis methods, coupled with the processing and computational bottlenecks, are often resolved using traditional programming methods. However, the GPU-CUDA-ENSEMBLED algorithm utilizes GPUs and parallel processing to provide a paradigm shift in feature-based sentiment analysis as applied in product evaluation systems [1].

This paper describes how the GPU-CUDA-ENSEMBLED, a brand-new design for modelling product reviews, was applied here. As a result, the

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Original Article

Dual Architecture Mechanism for Robust Cybersecurity in Relay Systems

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Abstract *- Relay systems in power-grid control networks remain vulnerable because existing intrusion-detection models neither provide onsite alerts when misclassifications occur nor disclose synthetic data generation methods, hindering operational reliability and reproducibility. This work introduces a novel dual-layer security architecture that couples a high-dimensional machine-learning engine (XGBoost and Random Forest) with hardware alarms (LED and buzzer) for real-time onsite notifications. It employs transparently defined synthetic data-best, average, and worst scenarios generated via with {α1, α2, σ} settings published for each scenario. Experiments on a combined real and synthetic dataset (12,000 samples, 119 features) were deployed on a Raspberry Pi 4 (4 GB RAM, SanDisk A1 microSD). The system achieved 97.5 % accuracy and < 0.5 % false-positive rate, with an average inference latency of 150 MS and peak memory usage of 85 %. Limitations, including edge-device resource constraints and the need for periodic retraining, are discussed, and future work on lightweight neural models and CI/CD pipelines is outlined.*

Keywords *- Cybersecurity, Relay Systems, Dual Architecture, Machine Learning, Intrusion Detection.*

1. Introduction

The modern power grid is transforming rapidly as it embraces digital technology and integrates advanced communication networks. Once isolated, ICS is merged with Information Technology (IT) networks to enhance performance efficiency, real-time monitoring, and grid operation. This convergence of Operational Technology (OT) and IT has significantly increased the attack surface, leaving the critical infrastructure vulnerable to numerous cyber-attacks. Cyber-attacks on power systems have become more common, resulting in large-scale outages and serious concerns about national security, public safety, and economic well-being.

1.1. Background and Motivation

Power systems are extremely significant to modern society since they produce, transport, and distribute electricity. Significantly, these systems operate effectively and safely, yet they are being targeted increasingly by advanced cyber attackers. Incorporating ICS into power grids has fundamentally altered the picture: these systems now depend on sophisticated networks that can be exploited in various manners, such as through false data, replay attacks, and DDoS attacks. Old security solutions previously worked in isolated control systems are no longer sufficient. Cyber attackers can exploit vulnerabilities in communication protocols (such as IEC 61850 and DNP3) or the operating software of such systems, potentially causing blackouts, equipment damage, and even cascading failures throughout the grid. Since power systems are critical, it is necessary to build robust IDS capable of identifying and preventing cyber-attacks before they become significant issues. One of the major challenges in constructing effective IDS for power systems lies in the unavailability of useful, realistic data that represents normal operations and attacks. Without sufficient data, detection models based on machine learning and deep learning cannot be trained and tested. For this reason, numerous recent publications have focused on developing large-scale and realistic datasets that simulate various cyberattack scenarios in power systems. Developing datasets for ICS cybersecurity is an essential part of this research. A strong dataset should reflect how power systems act under normal and extreme conditions. Several methods have been suggested in the research, such as using physical testbeds, creating synthetic data, and combining data from multiple sources. For instance, researchers have used physical testbeds such as the Electric Power and Intelligent Control (EPIC) testbed to simulate FDIA and TDA attacks.

Detection of Type 2 Diabetes Based On Electronic Health Records Using Hybrid Support Vector Machine & Random Forest

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***Abstract*—Effective Type 2 Diabetes treatment and patient follow-up depend on an early diagnosis. Machine Learning (ML) techniques have advanced with the increasing the amount of Electronic Health Record (EHR) data that is available. However, overfitting, interpretability issues, and computational costs could occur from managing and modeling large data sets. A study that focused on elements of the EHR collected from a homogeneous group of participants before the Type 2 diabetes (T2D) diagnosis using Support Vector Machine-Random Forest (SVM-RF) to identify type 2 diabetes. Compared to the previous machine learning methods, the proposed approach is more reliable, provides the best prediction performance-computation and improves the model's interpretability.**

Keywords –Type 2 Diabetes, Machine Learning, Electronic Health Record (EHR), Support Vector Machine, Random Forest

I. INTRODUCTION

Sometimes metabolic problems cause blood sugar levels are increase, diabetes develops. Exposure of this type can harm the heart, blood vessels, eyes, other organs and systems in the body. It is significant to remember that hyperglycemia, or high blood sugar, is the direct cause of these negative effects. This occurs as a result of the body's inability to properly utilize the insulin, it generates or control blood sugar levels [1]. Insulin is a hormone that increases glucose available and absorbed by cells. Considering that there are two primary classifications of diabetes: type 1 and type 2. It's important to understand that type 1 diabetes is an autoimmune diseases, meaning that insulin-producing cells are continually attacked and destroyed by the body's immune system. A blood sugar level of less than 55 mg/dL is considered critically low. It cannot be treated with the 15-15 rule. Depending on symptoms, this might also not be able to check the blood sugar or treat it on own.

Make sure family members, caregivers, and friends are aware of your low blood sugar symptoms so they could help with treatment if necessary. High blood pressure is best treated with injectable glucagon. They can obtain a glucagon kit with a prescription. Consult your doctor to determine whether you need a kit. Make sure you understand when and how to utilize it. Make sure that your family members have received training on how to use the glucagon kit and that they know where you keep it. After getting a glucagon injection, it's critical to get emergency medical attention by contacting a doctor immediately. A glucagon injection usually causes a person who faints (passes out) from extremely low blood sugar to wake up within 15 minutes. They should have another dose if, within 15 minutes of the injection, they are still unconscious. When conscious and capable of swallowing:

Problems with the body's improper utilization of insulin, which are caused by lifestyle-related variables, are the characteristic of type 2 diabetes [2]. Regardless of socioeconomic position, over the last decade, there has been a significant worldwide increase in the prevalence of type 2 diabetes. Whether they are developed or developing countries makes no difference [3]. Diabetes can result in lower limb amputations, myocardial infarction, stroke, and blindness in addition to kidney failure and stroke. Heart disease and tuberculosis risk are also significantly higher in diabetics with poor glycemic control. According to World Health Organization (WHO) / Pan American Health Organization (PAHO) estimates, diabetes will take the lives of 6.7 million people by 2022. Eighty-one percent of diabetics are from middle-income countries.

Given that 90% of adults live in middle-income countries and that approximately 40% of them do not have a diabetes diagnosis, the disorder has a high chance of developing in adults [4]. Statistics show that the amount spend worldwide on diabetes-related medical care will reach USD (United States dollar) 966 billion in 2021, a 316 percent increase over the previous decade. The International Diabetes Federation (IDF) estimates that over 541 million persons worldwide suffer with glucose intolerance. This statistic indicates that approximately 10% of the US (United States of America) population have a high chance of developing type 2 diabetes at some time in their lives. According to estimates, 68% of adults with diabetes remain in countries like the United States.

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PROCEEDINGS ARTICLE | SEPTEMBER 10 2025

A quantitative analysis on the verification of cache coherence based SV assertions

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The cache coherence controller recognizes memory lines from the local cluster that are stored in other clusters. To maximize access to data in system memory, each processor in multiprocessor systems are frequently designed to function with cache memory. It's possible that one item reaches the first cache and another value reaches the second cache. A system might then be unable to determine which value to put into system memory. Numerous cache coherency approaches have been developed to address similar problems. Among the mechanisms is the MESI coherency Intersection Controller. It uses the MESI coherence protocol to preserve the integrity of the cache data. It synchronizes the memory demands of the system masters. Maintaining data in memory and local caches is made possible by it. You can express rules in design description in a System Verilog style that is understandable by tools by using the descriptions and specifications of the System Master SV Assertions (SVA). It's basically a linguistic construct that offers a strong substitute for writing checkers, restrictions, and cover points for your design. The following components are provided by this project: A controller core that can be synthesized and comes with an entire environment for documentation, synthesis, and verification. Guidelines for adding MESI_ISC to an existing system. The MESI_ISC is verified using SV Assertions.

Topics: Multiprocessor, Programming languages

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RESEARCH ARTICLE | SEPTEMBER 10 2025

Design and development of a synchronous dual-band patch antenna with enhanced bandwidth using defective ground structure (DGS) technique

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A Novel, Simplified Approach to Implementing Defected Ground Structure (DGS) in Microstrip Patch Antennas (MPAs). This study presents a straightforward method for integrating DGS into MPAs, utilizing radiating elements and DGS with identical dimensions. Two complementary DGS designs are explored, achieving resonant frequencies at 10 GHz, 12 GHz, 16 GHz, and 16.6 GHz. The proposed antennas demonstrate up to 22% increased bandwidth compared to conventional MPAs. The design is suitable for Ku-band and X-band applications.

Topics: Ku band, Telecommunications engineering

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Evaluating the tetinal eye disease in depth using neural networks for early detection and prevention

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AIP Conf. Proc. 3342, 030020 (2025)

Retinal fundus imaging is a helpful diagnostic method used by ophthalmologists to identify retinal problems. Early detection can prevent blindness and improve the chances of a full recovery. Retinal fundus imaging is used by medical experts to diagnose retinal conditions such as diabetic retinopathy and retinitis pigmentosa. To diagnose disorders like diabetic retinopathy, current machine learning study has focused on categorizing the image following feature extraction. Without purposeful segmentation or feature extraction, our goal in this study is to automatically identify between images of healthy retinas and those with retinal abnormalities. Rather, we Utilize a deep learning technique to automatically classify every retinal fundus picture as healthy or diseased. The network architecture is simple and speedy. The 2 datasets, containing actual patient retinal fundus photos from nearby hospital, were used to evaluate the model. It has been determined that this model has an accuracy of between 96.5% and 99.7%.

Topics: Feature extraction, Deep learning, Artificial neural networks, Machine learning, Diseases and conditions, Visual system

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RESEARCH ARTICLE | SEPTEMBER 30 2025

Evaluation of the signed and unsigned data operations by using rounding bases execution multiplier

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AIP Conf. Proc. 3342, 030021 (2025)

The IEEE Standard for Floating-Point Arithmetic (IEEE 754) has long been the industry standard for floating-point arithmetic and is utilized by the vast majority of modern computer systems. The widely utilized IEEE 754 arithmetic has some competition from a number encoding format named posit (Type III num). According to John L. Gustavson, this latest format could give better accuracy than the present standard while requiring the same amount of bits or fewer and simpler technology. This undergraduate thesis examines and compares the features and attributes of the novel posit number format with standard operating procedure for floating-point numbers (floats). We concentrate on ascertaining whether posits would make a suitable drop-in substitute for floats based on the claims made in the literature. Initially, we suggest a low-level strategy for a basic arithmetic multiplier that makes use of the Xilinx tool to produce synthesizable HDL code. This is useful for multiplying solely unsigned values. On the other hand, we must concentrate on both signed and unsigned integers in the practical. Therefore, we introduced a novel method known as the RoBA (Rounding Based Approximate) multiplier, which aids in a 10%, 40%, and 54% reduction in area, latency, and power, respectively. Finally, we use the Xilinx tool to build synthesizable HDL code for a low-level strategy of a posit arithmetic (signed and un-signed) RoBA multiplier, designed with aid of XilinxISE14.7

Topics: Computer systems, Industry

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RESEARCH ARTICLE | SEPTEMBER 30 2025

A safe and observational smart robot system for monitoring and managing in real time using Raspberry Pi and IoT

A. V. Nageswara Rao; Bajivali Shaik; Chaitanya Kumar Marpu; K. Krishnam Raju

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AIP Conf. Proc. 3342, 060009 (2025)

The development of robotics-assisted Internet of Things (IoT) applications has become a key area of focus in recent times. This study centers on the use of reconnaissance robots for enhancing security, enabling remote monitoring, and conducting inspections, particularly in residential settings. Over the past decade, remote observation has gained prominence as a critical area of research. Here, we present a reconnaissance robot designed for versatile applications, including residential use and beyond. Robots are increasingly becoming integral to our daily lives due to their ability to minimize human effort and reduce the risk of errors. These robots can be manually operated or programmed to adapt to various needs. This article primarily explores the design and deployment of a versatile robot capable of real-time obstacle detection and avoidance.

Topics: Internet of things, Robotics

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RESEARCH ARTICLE | SEPTEMBER 30 2025

An innovative technique for low leakage power SRAM cells using FinFET-based self-controlled voltage level techniques

AIP Conf. Proc. 3342, 060023 (2025)

In the modern era of tiny circuits, devices with low power consumption are essential. Memory plays a critical role in the newest technological products. Memory maintenance got more difficult as technology developed in terms of power consumption, stability, and speed. Due to scaling, the sub-threshold current leakage plays a main role in total power dissipation. This study suggests using FinFETs to implement a self-controllable voltage level (SVL) for minimum leakage power static random-access memory (SRAM) cells. This paper covers the usage of FinFETs in an SRAM cell to decrease leakage power dissipation by utilizing SVL Method. Applying an SVL switch can reduce total power dissipation by either enhancing the ground node voltage associated with the cell in standby state (lower SVL) or decreasing the supply voltage to the cell in standby state (higher SVL), or by doing both at once, as combined with this SVL switch circuit, the FinFET-based SRAM cell exhibits lower power leakage consumption and superior performance as compared to conventional SRAM cells.

Topics: Electrical properties and parameters, Energy use and applications, Switching circuits, Static random access memory

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IQAC

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Probabilistic neural network based heart rate, auto-regressive coefficient, and spectrum entropy analysis for the classification of arrhythmia

AIP Conf. Proc. 3342, 030022 (2025)

This study uses probabilistic neural networks to classify arrhythmias using a novel combination of three electrocardiogram (ECG) features: heart rate (HR), spectral entropy (SE), and AR coefficients. The HR has shown a major factor in the identification of potentially deadly arrhythmias. Developing a PNN-based technique for enhanced cardiac arrhythmia identification and classification is the aim of this project. The results display the unique grouping of ECG characteristics deliberated in this study enables a more accurate and consistent arrhythmias classification.

Topics: Entropy, Artificial neural networks, Diseases and conditions, Medical diagnosis, Heart rate

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[illegible] VOLUME 3, SEPTEMBER, [illegible]

Analysis on parallel computation encoding to speed up the processing time by logical utilization of serial computing techniques

Jujjuri Reddy Yeruva; Brahmaiah Naik Jatothu; Chiranjevulu Divvala; Jayalakshmi Anam

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AIP Conf. Proc. 3342, 050013 (2025)

https://doi.org/10.1063/5.0043764

The in-vehicle system (IVS) chip's Turbo encoder's design and implementation as an integrated module are examined in this study. The field programmable gate array (FPGA) was utilized in the development of the Turbo encoder module (TEM). Both serial and parallel computations are examined for encoding method. The two design philosophies are examined and discussed. It is shown that both processing speed and chip size may be improved by improving the parallel computation approach. FPGA method have been utilized in development of TEM. Xilinx and Verilog tools are used for the simulation and design of the module. Additionally, parallel and serial computing techniques are examined during the encoding process. It is shown that the processing speed and chip size of the module can be increased by parallel calculation. The parallel computation encoding method reduces logic utilization by 73% and processing time by 58%, when compared to the serial computation strategy. The improvement in processing time could be observed in both chip processing and simulation analysis.

Topics: Field programmable gate array, Programming languages

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Implementation of Heart Disease Prediction Using PCA Classification Algorithm

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***Abstract*—Heart disease and stroke are the two leading causes of death worldwide, accounting for one in every four deaths in India. These diseases are the main causes of death in this country. Based on data from the World Health Organization (WHO), cardiovascular disease causes around 24% of non-communicable illness-related deaths in India. The primary cause of these deaths is Heart disease or Coronary Artery Disease (CVD). Furthermore, in industrialized countries such as the United States of America and other rich nations, coronary heart disease is the primary cause of death. Every year almost 17 million people worldwide pass away from cardiovascular disease, Asia has the highest death rate from cardiovascular disease, making it the leading cause of death worldwide. Prediction of heart disease is done by many traditional methods, these methods are time-consuming and not accurate. Therefore, to overcome these issues Principle of Component Analysis (PCA) is used in this analysis.**

***Keywords*—Coronary Artery Disease (CVD), Principle of Component Analysis (PCA), Stroke**

I. INTRODUCTION

The most common cause of death in the United States is heart disease, which is made up of a number of disorders that affect the structure and function of the heart. An insufficient supply of oxygen-rich blood from the heart's arteries results in coronary heart disease, commonly referred to as ischemic heart disease or coronary artery disease [1]. According to the centers for disease control and prevention, the most prevalent type of heart disease, this affects the major coronary arteries outside the heart, is coronary artery disease, these affects 20.5 million adults. The condition known as coronary microvascular disease, which affects the microvascular disease in the heart muscle, is more common in women.

These all determined by the type of coronary heart disease. A waxy substance called cholesterol that develops inside the coronary artery lining and forms plaque is a common cause of coronary artery disease. The heart's major arteries may become completely or partially blocked by this plaque development [2]. The inner walls of the small blood arteries of the heart might sustain injury, leading to coronary microvascular disease.

By leading a heart-healthy lifestyle and taking medication, coronary heart disease can be avoided by most people. A number of disorders that might impact one or more heart and blood vessel components are together referred to as cardiovascular diseases [3]. Heart and blood vessel problems are included in the category of cardiovascular disease, which can present with either physical symptoms or no symptoms at all.

Heart illness encompasses a range of conditions that can impact the heart. When individuals consider heart disease, they frequently believe that CAD is the most prevalent type and that it might cause heart attacks. However, these experience issues with the electrical system, valves, or cardiac muscle itself[4]. It is difficult for the heart to deliver enough blood, oxygen, and nutrients to the body when it is not functioning properly. The heart provides the fuel that maintains the body's systems operating, in some way. Every problem with that fuel's supply affects every system in the body. Medication and lifestyle modifications can prevent heart disease and maintain heart health.

In patients with CAD, plaque first develops inside the coronary artery walls. This narrows the blood supply to the heart muscle, preventing it of adequate oxygen. They also refer to this as ischemia. A small part of the muscle may have less blood flow due to a chronic coronary artery that occurs gradually over time. Alternatively, if a blood clot forms as a result of an acute plaque rupture, the condition could be serious [5]. The majority of people have plaque accumulation beginning in childhood, which worsens with age. Family history is one of the traditional risk factors for coronary artery disease, along with high Low-Density Lipoproteins (LDL) and low High-Density Lipoproteins (LDL) cholesterol, smoking, diabetes, obesity, and high blood pressure. The risk of cancer increases in men after age 45, while in women, it increases after age 55. Youth and children are particularly susceptible to CAD, according to research[6]. Therefore early adoption of preventative measures may provide greater lifetime advantages. Maintaining a healthy lifestyle can prevent the advancement of CAD, and there is potential for its improvement prior to its development. Maintaining a healthy lifestyle that includes eating well,

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DEEP LEARNING TECHNOLOGY USED HIGH DYNAMIC RANGE IMAGE RECONSTRUCTION AND DETECTION

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Abstract: **The suggested remedy for saturated pixels in digital camera photos introduces a brand-new learning-based method for reconstructing images with high dynamic range (HDR). While current techniques concentrate on increasing brightness range, they frequently fall short in producing realistic textures, leading to errors in places that are too saturated. Our method reconstructs an HDR image by using aesthetically beautiful saturated pixels from a low dynamic range (LDR) image. We provide a feature masking strategy to address problems discovered during training, when saturated and well-exposed pixels got comparable convolutional filters, resulting in uncertainty and checkerboard and halo aberrations. This method improves the overall quality of the reconstruction by reducing the contribution of features from saturated regions. Furthermore, in order to guarantee visually pleasing textures in the reconstructed HDR photos, we adjust the perceptual loss function based on VGG.We use a two-step procedure in order to properly train our system. We first train the system for picture in painting on a sizable dataset, and then we modify it for HDR reconstruction. Our method performs exceptionally well even with a small number of HDR photos because it uses an advanced sampling strategy to choose hard training patches from a wide range of settings. Convolutional neural networks, feature masking, perceptual loss, and high dynamic range imagery are important components of our methodology.**

Keywords: Convolutional neural networks, U-net, high dynamic range, low dynamic range, HSV color space, and supervised learning

I. INTRODUCTION

The last several years have seen significant advancements in image processing, which has raised the need for technologies to create images with resolutions close to reality. The most popular technique for improving image quality is high dynamic range (HDR).Compared to low dynamic range (LDR) photographs with low brightness, high dynamic range (HDR) images provide images with brightness that is closer to the range of human vision. However, in order to capture a large dynamic range, HDR photographs must be acquired using costly .Equipment that can function beyond the constraints of a typical camera sensor. As a result, most individuals only have limited access to HDR images.

A specified number of low dynamic range (LDR) photos captured at various scene exposures are combined to create a large High Dynamic Range (HDR) image. Capturing the whole range of light is limited because the dynamic variance in real-world scene illumination beyond the capacity of widely used digital camera sensors.

As a result, areas of the photos are either overexposed or underexposed. Conventional approaches addressing this challenge either use expensive, large, unwieldy optical instruments or require manipulating the movement of the scene.

Contemporary deep learning algorithms, in contrast to traditional techniques, make systematic use of contextual input by employing convolutional neural networks (CNNs) with large receptive fields. But even sophisticated methods frequently face difficulties, especially when dealing with oversaturated areas in photos.

The revolutionary lightweight CNN LiTMNet—short for Lightweight Inverse Tone Mapping Network—is proposed in this research as a solution to this problem. On a smartphone, the LiTMNet performs quicker than the HDRCNN and can rebuild HDR photos with a similar level of quality. LiTMNet specifically seeks to estimate and recover the lost information in the highlighted regions of a single exposed LDR picture that it receives as input. There are two factors that drive this tactic. Deep learning is a family of computational techniques

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Deploying Healthcare Monitoring System For Elderly Patient Care using IoT and Neural Network Techniques

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Abstract— Utilizing Internet of Things (IoT) technology in the healthcare sector can revolutionize the care provided to individuals. This study illustrates the application of IoT in ensuring continuous healthcare for elderly patients, particularly focusing on scenarios like epidemiology in rehabilitation centers, intensive care units (ICU), and home health care. The research integrates a variety of sensors, machine learning algorithms, and cloud computing to establish a healthcare system driven by IoT. With a participant pool of 50 individuals, including both healthy adults and those with various ailments, the study employs Short-Term Memory (LSTM), decision trees, and Artificial Neural Network (ANN) models to analyze sensor data, specifically temperature and heart rate measurements. The primary objective is to identify uncertainties and facilitate timely interventions. Results indicate that ANN surpasses LSTM and tree models in parameter estimation, displaying superior accuracy and F1 scores in anomaly detection while minimizing false negatives. This use of predictive ability has the chance of reforming treatment through early detection and administration of treatments. This research, in short, exemplifies the importance of integrating prognostic analytics in health systems that support IoT; in other words, it enables continuous monitoring, forecasting, and access to care requirements concerning changing forms of illness. From a scientific perspective, this work is seen as being proactive because it adopts green medical materials and uses IoT-based methods so that control performance may be improved for the patients.

Keywords—IoT, performance metrics, machine learning, security, health care

I. INTRODUCTION

Over the last few years, technological advancements have been on the rise, and similarly, the medical field has witnessed a considerable boom. Among other groundbreaking revolutions of our time, the Internet of Things (IoT) plays a crucial role for all its stakeholders. IoT involves a collection of devices that are interconnected into one system through sensors and communication systems to keep track of transactions [1].

The use of Internet of Things technology in the healthcare industry has contributed to the development of innovative ways to improve transportation tracking and monitoring [2]. The evolution of this paradigm has a significant impact on the delivery and management of healthcare services, especially when it comes to fulfilling emergent needs and care in an ICU environment. The sphere of IoT implementation in the healthcare sector appears most attractive due to its positive influence on patients' results, decline in healthcare expenditure, and optimization of resource utilization. The present study seeks to probe into the IoT-based applications in non-invasive healthcare systems for geriatric patients [3, 4].

Emerging from the continued increase in world population and mushrooming cases of diseases daily, there is a strong need for highly advanced monitoring gadgets that can timely detect emerging health problems and recommend appropriate intervention measures. In this article, I would stress IoT innovation development as this industry caters to such needs of ensuring personalized care for individuals no matter where they are or what time it is. The efficiency of Internet of Things (IoT)-based healthcare devices relies on the incorporation of multiple cutting-edge elements like sensors, machine learning, and cloud computing. These components make up the whole system where gathering, displaying, and analyzing health data form its foundation. This innovation has the potential to enhance diagnosis sensitivity, enabling timely diagnosis by detecting gradual irregularities to help healthcare professionals quickly grasp developmental trajectories. In such scenarios, these apps can be a matter of life and death as they can minimize infection risks for patients and healthcare professionals [5, 6].

To extend the capabilities of IoT in the medical field, one can utilize systems for pattern recognition using Long Short-Term Memory (LSTM), decision trees, and Artificial Neural Networks (ANN). This information is discussed in this study. In other words, these algorithms are good at unveiling complex patterns in sensor data and predicting health issues accordingly. The performance comparison of these models

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User Behavior Patterns and Preferences in Data-Driven Corporate Communication: A Statistical Analysis

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Abstract- **This research delves into statistical analysis of data-driven corporate communication model usage patterns to provide insights that will enhance communication strategy within business organizations. The quantitative design has been applied with data gathered through an online questionnaire distributed to 500 users who represent diverse different demographics. The survey aimed to ascertain user preferences for modes of communication, most essential features of communication models, satisfaction rates with different models, and modes of access preferred. Descriptive statistics applied to the measurement of user behavior had text-based interaction as the most preferred mode, followed by video-based communication. The study showed personalized content served as the essential feature because 55% of users identified as positive towards customized communication that responded instantly. Our study reveals that Model A which provides personalized content with simultaneous real-time responses was most satisfying because it shows the essential role that user requirements play in communication strategies. The research confirms that mobile applications remain users' primary engagement platform since business leaders should consider mobile-focused communication solutions. The collected data features practical learnings that assist organizations to develop enhanced communication models which boost both user satisfaction and effective persuasive communication practices.**

Keywords:User Behavior Patterns, Data-Driven Communication Models, Corporate Communication, User Preferences, Satisfaction Analysis, Mobile App Access

I. INTRODUCTION

The modern corporate communication environment has prompted businesses to develop data-based models that optimize their communication performance [1]. Processing data through analytics enables corporate communication systems to gather insights about user actions on communication networks and user-specific choices [2]. Modern communication models draw information from extensive data collection from digital platforms and mobile applications while social media platforms to create personalized communication strategies [3]. Business organizations gain the capability to enhance customer satisfaction through effective communication processes when they understand user patterns because this knowledge allows them to deliver personalized messages and organize optimized communication methods to increase customer engagement [4]. Researching user behavior patterns in these communication models helps build strategies that match current user perception and demand changes [5].

An examination of user behavior patterns through data-based statistical analysis in corporate communication systems seeks to discover essential findings for decision-making purposes [6]. The research evaluates how user records and communication preferences and various communication methods influence user satisfaction through their analysis [7]. Studies based on statistical methods analyze big data preferences which lead to productive insights for businesses to strengthen their communication

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An Assessment of a Single, Detail-Preserved Image Processing Algorithm for De-Hazing due to Airlight Refinement

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Abstract — **The natural occurrence of haze is caused by scattering and air absorption. For many uses, haze removal for a single image is crucial. Dehazing, therefore, is a method that can address this issue. Some of the disadvantages of the earlier de-hazed outcomes include over smoothed photos that lack details. There are two reasons behind this disadvantage. 1) Imprecise air light measurement 2) Disregards the many scattering. Thus, a strategy is put up to get rid of these two issues. The detail loss issue can be successfully resolved by the suggested algorithm. A De-hazing algorithm has been suggested that contributes the following ways in order to obtain the detailed image. The gradient strength of the minimum channel is utilized for determining punishment weights to dark channel smoothening, and depth-edge aware prior is used to precisely tune the air light. The air light impact regularity is employed in picture post-processing to improve image detail using an adaptive sharpening approach. As a result, the suggested algorithm helps with the post-processing stage as well as haze reduction. Evaluation of the suggested algorithm is done through both objective and subjective comparison. The objective evaluation of the suggested process uses discrete entropy, visibility level descriptor, and fog aware density evaluator to statistically assess its performance, while the subjective comparison is conducted among different other methods and just represents the levels of visual quality. De-hazed photos produced by the suggested method will therefore seem natural.**

Keywords— De-hazing, image sharpening, mean-square error (MSE), air light estimation, haze removal, peak signal-to-noise ratio (PSNR) component

INTRODUCTION

The most important issue in computer vision and image processing is haze. It originates as a result of atmospheric water droplets. The quality of an image declines when it is affected by haze. Haze lessens the image's contrast and makes the scenes less visible. Numerous applications, including graphics, object detection, outdoor monitoring, video compression, and many more, may be impacted by haze. For this reason, dehazing is employed to restore the visual quality. De-hazing is the procedure of eliminating haze from an image. Picture dehazing is the procedure of eliminating haze from an image. Two varieties of dehazing exist: Dehazing during the day and at night. Various techniques exist for dehazing images during the day. The atmospheric light and transmission map make up the linear equation that represents the daytime haze model. once the ambient light and transmission map have been attained. The fundamental formula for representing the fuzzy picture is:

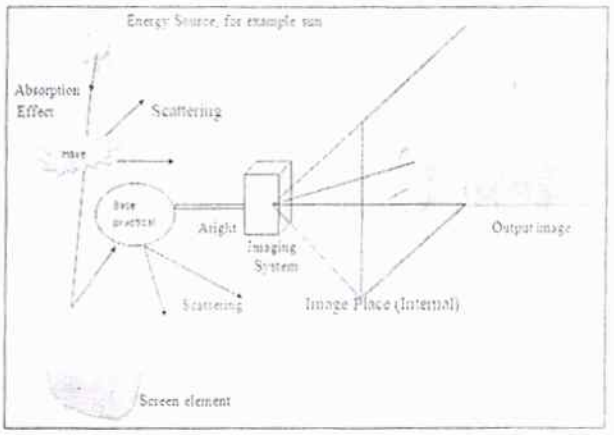

Fig.1. Hazy Image Formation

$$I(x, y) = J(x, y)t(x, y) + A(1 - t(x, y)) \quad (1)$$

Here J stands for natural image, t for estimated transmission map, A for estimated atmospheric light, and I for observed image or hazy picture. Degradation is unique since it depends on unknown depth information. While some algorithms improve blurry image facts to remove convolution effects, the majority of these methods are applied as stand-alone post-processing techniques that do not take depth into account. In order to obtain a clearer image without losing any important details.

Image Captioning Using Deep Learning: Bridging the Gap between Vision and Natural Language Processing

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Abstract- The process of writing educational captions for photos has evolved dramatically in recent years thanks to developments in deep learning technologies. The issue of fully understanding image content and creating logical, contextually relevant captions remains a serious difficulty despite notable progress. Image captioning is a crucial task that can be applied to editing tools, virtual assistants, image indexing, and assistance for people with disabilities. AI and Natural Language Processing (NLP) meet up in picture or image subtitling/caption, which is the test of making clear normal language phrases for pictures. Since profound learning strategies, Using Regional Neural Networks (RNNs) and Convolutions Neural Networking (CNN) for image extraction, which are as often as possible upgraded by consideration instruments, have been taken on, this interdisciplinary test has seen critical progressions. Text summarization, template construction, and information retrieval are the three main activities included in the suggested model. The both directions long short-term storage method is used to locate the written content utilizing every word in a phrase, extract the knowledge, and finally incorporate it within the semantically vector. This paper highlights the importance of deep learning as a whole while also examining the development of image inscribing, its important methodology, and state-of-the-art techniques. It additionally discusses the hardships, uses, and expected ways in this field.

Keywords- Image Captioning, Deep Learning, Natural Language Processing, LSTM, Backpropagation.

I. INTRODUCTION

The technique of explaining the material shown in an image, known as picture subtitles, has garnered a lot of attention recently. It may be utilized in a number of situations, such as support for the disabled, image indexing, virtual assistants, and altering program recommendations. It has been demonstrated that deep neural network (DNN) based techniques produce remarkable results on picture captioning tasks when huge datasets are available [1]. Recurrent neural networks (RNNs), which are frequently driven by an LSTM [2] component, are the basis of these methods. Because of its exceptional ability to acquire long-term reliance via cell memories, For vision-language tasks including image tagging [3], visible inquiry answering [4], question generation [5], and visually chatting [6], networks based on LSTM were widely regarded as the standard. However, the complex dealing and deleting method, the fundamental sequence manufacturing, and the high storage requirements due to back-propagating through time (BPTT) make training challenging.

Auto captioning for images is accomplished by sequentially completing essential tasks. In order to determine the relationship between objects, characteristics must first be properly retrieved. Once various objects from a picture have been identified, it is necessary to determine whether the cat is on the grass. After objects have been found and associations have been established, the next step is to create the text description, which is a list of words arranged in a way that makes sense given the relationships between the picture objects [7].

To achieve these crucial objectives, deep learning algorithms of various types are used. For example, RNN or LSTM could be used to progressively generate textual explanations, while CNN with various region-proposing techniques, such as RCNN as well as Faster RCNN, may be used to gather things and visual data. Various methods are developed to use these networks for automated picture captioning in various domains. However, it is possible that the machine will eventually be able to provide statements with accuracy on par with human explanations [8]. A range of assessment matrices, including BLEU, CIDEr, and ROUGE-L, are available to assess the efficacy of the deep computing framework after picture captioning training.

Creating educational captions for images is a difficult task that pushes the boundaries of imagery recognition and natural language processing (NLP). It entails automatically producing textual descriptions for photos. Building a system that can interpret images, close the gap among visual perception and understanding, and produce an appropriate

Detection of Type 2 Diabetes Based on Electronic Health Records Using Hybrid Support Vector Machine & Random Forest

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Kommalapati Chandana | Suryeetha Bobbillapati | V. Venkata Rao All Authors

Abstract:
Effective Type 2 Diabetes treatment and patient follow-up depend on an early diagnosis. Machine Learning (ML) techniques have advanced with the increasing the amount of Electronic Health Record (EHR) data that is available. However, overfitting, interpretability issues, and computational costs could occur from managing and modeling large data sets. A study that focused on elements of the EHR collected from a heterogeneous group of participants before the Type 2 diabetes (T2D) diagnosis using Support Vector Machine-Random Forest (SVM-RF) to identify type 2 diabetes. Compared to the previous machine learning methods, the proposed approach is more reliable, provides the best prediction performance-computation and improves the model's interpretability.

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Research article

ANFIS-PSO analysis on axisymmetric tetra hybrid nanofluid flow of Cu-CNT-Graphene-Tio$_2$ with WEG-Blood under linear thermal radiation and inclined magnetic field: A bio-medicine application

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ABSTRACT

Background: The development of heat transfer devices used for heat conversion and recovery in several industrial and residential applications has long focused on improving heat transfer between two parallel plates. Numerous articles have examined the relevance of enhancing thermal performance for the system's performance and economics. Heat transport is improved by increasing the Reynolds number as the turbulent effects grow.

Applications: Regarding heat transfer, hybrid nanofluids are superior to mono nanofluids. The hybrid fluid of Cu-CNT + Graphene + TiO_2/WEG-Blood, which is subject to heat transfer in a channel between two parallel plates with an angled magnetic field and linear thermal radiation, has numerous applications in engineering, industry, and biomedical research, such as electronic cooling, drug delivery, cancer treatment, optics, missiles, satellites, transformer-electronic cooling, and military solar-equipment.

Objective: Examining the qualities of mass, flow, and heat transmission is the aim of the study of a hybrid Cu-CNT- Graphene-TiO2/WEG-Blood nanofluid as it moves via a tube of porous material that is exposed to linear thermal radiation, inclined magnetic, Forchheimer, and buoyancy influences. ANFIS-PSO model is assumed.

Method: Applying the ODE45 integration technique to the given numerical solutions yields nonlinear, non-dimensionalized, and highly partial differential equations that control the momentum, energy, and concentration. Consequently, the numerical simulation shows the concentration, velocity, and temperature profiles of the hybrid Cu-CNT- Graphene-TiO2/WEG-Blood nanofluid. A strong concordance is noted between recent and past results.

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Theoretical analysis of MHD Maxwell two phase nano flow subject to viscous dissipation and chemical reaction: A nonsimilar approach

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ARTICLE INFO

Keywords:
Maxwell fluid
Non-similar flow
Viscous dissipation
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Joule heating

ABSTRACT

Maxwell fluid represents the flow of polymers used in the food processing industry and the cooling of copper plates. Much research has focused on maxwell-fluid flows across stretched surfaces. This article takes a different approach by examining the impacts of the magnetic and electric force on such surfaces. We aim to understand the behaviour of non-Newtonian Maxwell hydromagnetic boundary layer flow when exposed to magnetic and electric fields. The novelty of this investigation is to construct a two-equation non-similar model. It aims to examine the momentum, thermal and mass transport of Maxwell fluid with suspended conducting nanoparticles, which incorporates viscous dissipation, chemical reaction, an external magnetic and electric field, Brownian motion and thermophoresis. Moreover, the rheological behaviours of the nanofluids are significant in defining them for convective heat transfer. The partial differential equations describe the problem, and after applying suitable transformations, it is finally transformed into a set of non-similar, nonlinear and coupled non-dimensional ordinary differential equations. To get results, the bvp4c method built within MATLAB is utilized. An analysis of pertinent parameters affecting non-Newtonian fluids and the nanophase of fluids is shown in this study. Findings show that as the strength of the inclination angle decreases, the velocity profile becomes more pronounced. The temperature field improves as the heat generation parameter rises. The dimensionless concentration tends to decrease with Brownian motion. Its potential applications include medical sciences, microelectronics, biomedicine and various industrial processes.

1. Introduction

Several liquids exist in industry and technology that defy linear analysis, particularly those exhibiting non-Newtonian characteristics. Engineers and industrialists have devoted considerable attention to non-Newtonian fluids. The non-Newtonian fluid has a wide range of applications within geophysics, biology, petroleum, and chemical engineering. The non-Newtonian fluids are classified according to three factors: integrals, differentials, and rates. Due to Maxwell fluid's stress relaxation characteristic, it can be used to

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Progressive Stages or Levels of Technical Reading with Sample Reading Components Indicator: For Fourth Year B. Tech Students

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KEYWORDS
Emergent stage, transitional stage, early stage, fluent-stage, technical, reading

ABSTRACT
The researchers are interested in finding the technical reading proficiency of fourth-year students. Hence the sample technical scripts are distributed and assessed for their reading efficacy. The entire class of students is subjected to the technical reading using the literary indicators. However, the class students are not divided into early-stage readers, transitional readers, and fluent readers. The researchers noticed the development of reading skills among students and the percentage is taken into account. The paper also helps the teachers to exercise a self-reflective assessment of their teaching every semester.

Discipline- Interdisciplinary(English language and technical subjects)

Introduction

Teachers may develop the interest to know the technical reading abilities of the students. Efficient teachers strategically and technically observe their students' speaking, listening ,reading and writing behaviors and identify the specific characteristics each student is displaying as a literacy learner in four different major skills.

Selecting the Problem

Teachers maybe unable to notice the students in the light of their reading behaviors.

Defining the Problem/Research Questions

1. What is an emergent stage in reading?
2. What are the characteristics of an emergent reader?
3. How can the early reader be transformed intoa transitional reader?
4. How do we decide the comprehension levels of the readers?
5. What is the status of the vocabulary of a transitional reader?
6. When do we conclude the fluent reader?

Hypothesis

The final-year technical students who would show readiness for training programs are lagging in their Reading and communication skills. Hence the researchers assumed that there must a problem either in English language or understanding the content itself.

Contents lists available at

International Journal of Thermofluids

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Thermal and Flow Dynamics of Magnetohydrodynamic Burgers' Fluid Induced by a Stretching Cylinder with Internal Heat Generation and Absorption

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ARTICLE INFO

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Burger's fluid
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Internal heat absorption generation
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ABSTRACT

This study investigates the flow dynamics of magnetohydrodynamic Burgers' fluid induced by a stretching cylinder, emphasizing the effects of internal heat generation and absorption. A temperature-dependent heat source is integrated to examine the characteristics of thermal energy transfer within the system. By applying boundary layer theory, we transform the governing partial differential equations into a standard system of ordinary differential equations through similarity transformations. The BVP4C method is utilized to accurately solve the resulting equations for velocity and temperature profiles. Graphical representations illustrate the influence of various physical parameters on both thermal and flow profiles, supported by comprehensive analytical interpretations. To validate our findings, a comparison with existing literature is performed, confirming the consistency and significance of our results. This research offers valuable insights into the thermal and fluid behaviors of Burgers' fluids, with promising applications in the development of advanced biomedical devices.

1. Introduction

Numerous industrial operations, medicinal fields, chemical engineers, and sophisticated technological areas rely heavily on fluid dynamics, particularly nanotechnology. To have a better grasp on its rheology, several academics are trying chiefly the robustness of fluid mechanics in many real-world contexts. The non-Newtonian liquids were the primary navel for the engineering and scientific community's investigations. Cosmetics, Oil-solutions, paper products, certain fuels, slurries, polycrystal melting's, and a host of other industrial liquids exhibit non-Newtonian fluid characteristics. A well-established truth is that non-Newtonian fluids, not feasible, adequately acknowledged as a single fluid expression. A large body of prior research has shown that a number of constitutive expressions may be used to characterise non-Newtonian fluids. Research into pseudo-plastic (shear thinning) fluids has made use of a number of models, such as those by Ellis, Cross, Carreau, power-law, etc. The significance of fluid dynamics has been further developed by Williamson, in the context of his hypothesis on pseudoplastic. The Geophysics, biological sciences, chemical industries, petroleum, many more rely on it, making it a crucial component of many sectors.

The significance and breadth of non-Newtonian fluid research's applications in fields and systems such as geophysical progress, petrochemical progressions, process conceive, heating and cooling, biomedical, chemical technology, metal manufacturing, have contributed to the field's rising popularity. Scientists and researchers focused on the non-Newtonian nanofluid issue because of its extensive engineering and industrial implications. Khan et al. [ ] identified that the micropolar liquid's thickness decreased as the Reynolds number increased, an exponential nonlinear stretching cylinder containing non-Newtonian microwave liquid is discussed in terms of Dufour and Soret parameters. Non-Newtonian Casson nanoliquid flow beneath the spinning thin needle was described by Bilal et al. [ ] in terms of activation energy performance. They looked at how the concentration of nanoliquids increases as the activation energy increases. Ramzan et al.

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Support vector machine learning classification of heat transfer rate in tri-hybrid nanofluid over a 3D stretching surface with suction effects for water at 10°C and 50°C

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ABSTRACT

Significance of the present study: Using machine learning and nanofluids for accurate heat transfer analysis, this study helps optimise thermal management systems in sectors such as advanced heat exchangers, biomedical devices, and electronics cooling. Several researchers have expressed interest in the potentially lucrative field of research that uses nanoparticles to improve heat transfer. Many fields, including cooling, heat exchangers, hyperthermia, energy generation, etc., use the dynamic features of nanofluids. Engineers and industrialists face significant challenges with heat transmission and energy storage.

Aim and Objective of the present study: So far, we have presented the idea of novel heat transfer liquids, such as nanofluids (NFs) and hybrid nanofluids (HNFs); ternary nanomaterials have been used to create a new era of heat transfer. Given the applications of nanofluids, this paper used a tri-hybrid AA7072 | SWCNT | MWCNT model to examine the impacts of a magnetohydrodynamic flow of 10^0 C and 50^0 C at H_2O as base fluid in two unique instances. The novelty of the manuscript is that it will analyse a ternary AA7072 –SWCNT+MWCNT nanofluid model regarding tri-hybrid nanoparticles.

Methodology: To convert the controlling PDEs into ODEs, the similarity transformations are used. The MATLAB function BVP4C was used to solve these translated equations.

Conclusion: The results of this investigation broadly agreed with those that had been previously reported in the literature. Examining these phenomena might guide the development of potential real-world engineering applications, such as those involving biosensors, medicine, and extreme heat. Plots and numerical interpretations are utilised to investigate how the flow phenomena are affected by physical factors; the composition of Case II has a greater Local Nusselt number than Case I because of its thermophysical character.

1. Introduction

Modern electronic equipment frequently struggles with heat control due to increased thermal rise or less accessible space for thermal emission. These limitations may be overcome by creating a leading design for heat-revolting devices or boosting thermal transfer capabilities. Nanofluid is an exceptional fluid that can fulfil any need. Nanofluids have piqued the curiosity of scientists because of the many fields in which they may be used. Heat transfer evaluations in pharmaceuticals and microelectronic processes are only two examples. Choi and Eastman [1] introduced the concept of nanofluids., which release fluids containing tiny particles. Researchers in the area of nanofluids are looking to the development of hybrid nanofluids as the next step in their investigation. A hybrid nanofluid includes much more than one/two nanoparticle types but uses a single carrier fluid. This hybrid nanofluid flow has garnered much attention from scientists with special properties. There is potential for hybrid nanofluid flows to simultaneously enhance the

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Case Studies in Thermal Engineering

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Deep learning approach for predicting heat transfer in water-based hybrid nanofluid thin film flow and optimization via response surface methodology

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Keywords:
Response surface optimization
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ABSTRACT

Significance: There have been rapid developments in ternary hybrid nanofluids in the past few years due to their potential and importance. The potential of ternary hybrid nanofluids to maximise heat transport has enthralled researchers, prompting them to conduct a more thorough investigation of the performance of common base fluids. Researchers utilise nanofluids in applications like sophisticated cool systems, atriums, biomedical artifices, and active-chemical reactors to maximise mass and heat transmission.

Objective: Dynamic simulations of an unsteady Ternary-hybrid nano flow via Thin film is investigated by considering Thermal radiation, Inclined MHD, and viscous dissipation.

Method: ology: The present study develops a novel mathematical model using PDEs as governing equations. These PDEs can be transformed through similarity transformations into ODEs after the BVP4C is utilised to solve them numerically.

Findings: The current study showed that SWCNT-Al_2O_3-MWCNT with H2O has a higher heat transfer rate than SWCNT-Al_2O_3 with H2O, making it appropriate for improving thermal performance in cutting-edge cooling systems such as heat exchangers and electrical devices.

1. Introduction

The variations in MHD fluid flow are one of the several theoretical and experimental uses of the magnetic field in astronomy, geophysics, and magnetic fabric processing. Many fascinating uses for inclined magnetic fields result from their interaction with porous media and plates. For example, they can improve efficiency in gas receptacles, removing contaminants, magnetic response measuring, separate filter materials, and microfluidic systems. There are some qualitative similarities when comparing the convection, heat transfer, and flow velocity patterns with an inclining magnetic regime to that with a vertical magnetic field. Nadeem et al. [1]

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Improvment of electrocaloric energy storage properties in eco-friendly $0.63Na_{0.5}Bi_{0.5}TiO_3$-$0.37SrTiO_3$-$NaNbO_3$ ceramic synthesized by sol–gel route

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ABSTRACT

The conventional solid-state reaction technique was used to create the lead-free ceramic composition of $0.63Na_{0.5}Bi_{0.5}TiO_3$–$0.37SrTiO_3$–$NaNbO_3$. A single-phase monoclinic crystal structure with *Cc* symmetry and a tetragonal *P4mm* phase has been confirmed using X-ray diffraction studies. Polarization and strain evaluated under an applied electric field have been employed to demonstrate whether these ceramics switched from ferroelectric to antiferroelectric characteristics. Surprisingly, with an electric field of 25 kV/cm, the induced electrocaloric effect (ECE) for the $0.63Na_{0.5}Bi_{0.5}TiO_3$–$0.37SrTiO_3$–$NaNbO_3$ ceramic exhibited a notable temperature change (ΔT) that was nearly 2.59 K. Furthermore, a high energy density of 3.96 J/cm^3 and efficiency of 80.13% were observed throughout a broad range of temperatures and frequencies, from 30 °C to 150 °C and 1 Hz, respectively, using an electric field with an intensity of 150 kV/cm. The ECE response and isothermal entropy change (ΔS) occurring simultaneously suggest that there is a great deal of potential for use in electronic devices.

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Impact of the Lead-Free Crystal Matrix $0.94NBaTiO_3$-$0.06SrTiO_3$ on the Photoluminescence Properties of Eu^{+3}

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The investigation reveals that the crystal field environment induces photoluminescence in Eu^{3+}. These synthesized materials hold promise for a wide array of commercial applications, particularly in the light emitting diode industry, representing a significant advancement for the current generation of technology. The lead-free electroceramics $0.94NB_{1-x}Eu_xTiO_3$-$0.06SrTiO_3$ ($x = 0$ and $x = 0.1$) are fabricated using the conventional solid-state reaction technique. Within these ceramics, both rhombohedral (R3c) and tetragonal (P4mm) structural phases coexist. The structural conformation and fluctuations in average grain size indicate the successful substitution of Eu^{3+} in $0.94NB_{1-x}TiO_3$-$0.06SrTiO_3$ ($x = 0$). The incorporation of Eu^{3+} ions into the host matrix induces a long-range ferroelectric state, marked by a rhombohedral (R3c) distortion, alongside enhanced tetragonal (P4mm) features. This structural modification results from the interaction between the Eu^{3+} ions and the host lattice, which fosters the emergence of a ferroelectric polarization. The coexistence of rhombohedral and tetragonal symmetries suggests a complex interplay of phases that collectively enhance the material's ferroelectric properties, potentially offering new avenues for applications in electronic and optical devices. Notably, compared to $0.94NB_{1-x}Eu_xTiO_3$-$0.06SrTiO_3$ with ($x = 0$), the coercive field (E_c) significantly improves, while remanent polarization decreases in the presence of Eu^{3+}. The domain orientation, particularly in Stage-C, demonstrates a pronounced scaling behavior, which can be attributed to the crystal field surrounding the Eu^{3+} ions. This interaction influences the material's domain dynamics, enhancing its electromechanical properties. As a result, both of these lead-free ceramics exhibit considerable potential for future electroceramic applications, offering a promising alternative in environmentally sustainable technologies.

1. Introduction

Over recent decades, significant advancements have propelled the fields of piezoelectricity and photoexcitation forward. Extensive research efforts have been dedicated to enhancing material properties and unraveling the intricate relationship between microstructure and macroscopic behavior.[1,2] As electronic devices become increasingly versatile, the role of multifunctional materials is becoming ever more critical. Researchers are focused on enhancing energy efficiency and performance by integrating diverse physical properties into a single, unified system. This approach not only optimizes functionality but also paves the way for the next generation of high-performance, sustainable technologies.[3,4] A prevailing strategy involves integrating piezoelectricity and optoelectronic excitation processes, forming the foundation of piezo-photonics. This approach heralds a promising frontier for research and application, spanning domains such as wearable electronics, artificial intelligence, human–machine interfacing, solar energy harvesting, and transparent display technologies.[5,6]

Piezoelectric materials occupy a prominent role within the realm of smart materials, capable of converting mechanical energy into electrical energy. Among these, $Na_{0.5}Bi_{0.5}TiO_3$ (NBT)-based ceramics stand out for their remarkable field-induced strain, surpassing even that of

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A novel exploration of magnetized nano Jeffrey fluid flow over a chemically reacted permeable disk with ohmic heating

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Swirling flows are important in rheological devices, spin coatings and lubrication, so we set out to investigate what makes chemically reactive non-Newtonian spinning flows across a disk with a radially applied magnetic field so interesting. Nanofluids are thermally enhanced working fluids with many interesting physical properties. This study takes its inspiration from rotating disk oxidations used in the medical techno industry and builds a mathematical model of a continuous convective von Kármán swirling flow including Jeffrey, magnetic, Joule/ohmic and chemical reactions. The wall anisotropy slips and the concentration-induced blowing effects are included. By using the bvp4c approach, the transformed boundary conditions (BCs) are addressed. Graphical representations of the effects of involved parameters on the density distribution of motile microorganisms, concentration, temperature and dimensionless velocity components are shown. Supporting evidence from prior research is included. Novel bioreactors, membrane oxygenators, bio-chromatography and food processing should take note of the study's findings. As Jeffrey's parameter upsurges, there is a decrease in radial velocity. As the Jeffrey parameter increases, there is a decrease in the circumferential velocity. Radial flow is significantly enhanced near the wall as the radial slip parameter (δ_R) increases. As the Eckert number grows, the quantity of temperature increases. Concentration distribution closer to the disk to grow as Le increases. The concentration and diffusivity of microorganisms drop as the number of motile microorganisms thickens.

Keywords: MHD; motile microorganisms; Jeffrey flow; thermal radiation; ohmic heating; chemical reaction.

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Comparison of the effect of conventional and microwave sintering on structural and dielectric properties of AlN - $CaZrO_3$ and Y_2O_3 composite ceramics

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ABSTRACT

Sintering AlN composite ceramics at low temperatures without forming Al_2O_3 poses is a significant challenge. This investigation demonstrates the comparative studies of conventional and microwave sintering of AlN ceramics with $CaZrO_3$ and Y_2O_3 additives. In the conventional sintering method, the AlN composites are sintered at 1700 °C for 20 h in a powder bed. In contrast, the microwave sintering method, AlN composites are sintered at 1400 °C for 30 min in a susceptor bed. Both approaches successfully yield a pure wurtzite AlN structure with space group $P6_3mc$ with no traces of secondary phase obtained for all pure and additive ceramics, achieving a relative density exceeding 97 % in the ACZ2Y sample. Raman spectroscopy further confirms the wurtzite structure AlN, characterized by six vibrational modes across all sintered composite ceramics. Dielectric properties are assessed over a temperature range of −140 to 200 °C and frequencies between 1 and 100 MHz. The optimal composite, ACZ2Y, displays microwave dielectric properties with ε_r ~9.94 and $\tan\delta$ ~11.04 × 10^{-4} sintered in the conventional sintering and ε_r ~9.02 and $\tan\delta$ ~7.34 × 10^{-4} in the microwave sintering, respectively. The microwave-sintered ACZ2Y composite also achieves the highest hardness of 1079.51 HV30, attributed to grain size and compactness. Compared to the conventional sintering method, microwave sintered composite exhibited superior dielectric properties, achieving appropriate relative density in short duration and at reduced sintering temperature. As a result, AlN ceramics produced by microwave sintering are excellent choices for electrical and microwave applications.

1. Introduction

Aluminum nitride (AlN) is a vital industrial material that has garnered significant technological interest due to its distinctive properties. These include high thermal conductivity, a low thermal expansion coefficient that aligns well with silicon, superior thermal shock resistance, a moderately low dielectric constant, high electrical resistivity, and robust corrosion resistance [1,2]. It provides excellent mechanical strength and is non-toxic compared to BeO (beryllium oxide), positioning it as a promising non-oxide material for thermo-mechanical and thermoelectric applications [3,4]. AlN ceramics have distinct features that fulfill the essential requirements for microelectronic packaging materials, such as high thermal conductivity, a low thermal expansion coefficient matching silicon, and high electrical resistivity characteristics [5–7]. In addition, they possess desirable properties for electronic chips, including low dielectric constant, low dissipation factor, high mechanical strength, stability, non-toxicity, and ease of processing [8–10]. AlN is considered an essential material for a wide range of applications, such as substrates for power electronics [11, 12], insulating material for RF and microwave packages [13], heat sinks of mainframes for supercomputers [14,15], high thermally conductive composite materials [16], as an electrostatic chuck for semiconductor processing equipment [17,18] and hardware for containing or processing molten metals and salts [19]. Fundamental radio frequency (RF)

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Contribution of Soret and Dufour aspects on Hybrid Nanofluid over 3D Magneto Radiative Stretching Surface with Chemical Reaction

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ABSTRACT

This study analyzes Soret and Dufour impacts on 3 dimensional, rotating HNF (CuO Ag/Water) flow over a linearly stretchable surface that contains a mixture of Ag and CuO nanoparticles with H_2O acting as the base fluid. Flow of governing PDEs is transformed into a system of ODEs, by using the bvp5c approach. Analysis and graphical presentation were made of the effect of the parameters included. The present study reveals that the Soret factor affects the surface's thermal efficiency whereas the Dufour impact lessens the surface mass transfer. The present work 99.9% compatible with previous work for stretching sheet parameter values are 0, 0.1, 0.2, 0.3, 0.4, 0.5. This conclusion may be employed in a variety of nanofluid cooling systems. This study may be used to inform future numerical and experimental studies.

1. Introduction

Many researchers and designers have researched distinct heat transfer applications, using nano liquids improvement, to reach cooling challenge needs such as electronics, transportation, and energy furnishing industries in the last few decades. The highest heat transfer rates are found by new Nano Fluids (NF) that are called HNFs. Towards hybrid nanofluids, Babar *et al.*, [1] analyzed the preparation of HNFs and their applications with challenges. Suresh *et al.*, [2] reported about Al_2O_3-CuO/H_2O hybrid nanofluid used 2-step methods and its physical-thermos properties. Thoughtfully these HNFs are a new group of NFs that have scores of believable uses in every field, including heat transfer namely micro fluids, fabricating, conveyance, refutation, therapeutic, seafaring, acoustics etc. With the concept of HNFs, there are many experimental research articles are published. At now, scientists are interested in learning more about HNFs in a variety of flow geometries. A novel technology idea known as HNF has been the subject of several published experimental studies. Its already excellent results are further improved by the use of HNF. Momin *et al.*, [3] experimented

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ORIGINAL PAPER

Collating the structural, vibrational, and photocatalysis properties of $LaFeO_3$ rare-earth orthoferrite nanoparticles synthesized by the sol-gel method

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Abstract

To synthesize the rare earth orthoferrite $LaFeO_3$ nanopowder, a perovskite, a sol-gel technique was employed. The resulting particles were characterized using SEM, XRD, and UV-visible absorption spectroscopy. The perovskite structure of $LaFeO_3$ (with La having an ionic radius of 1.36 Å) exhibits internal deformation due to the large ionic radii of the elements occupying the A-site. This deformation affects several of its desirable properties. Notably, there is a reduction in lattice parameters and an increase in octahedral distortion. Deviations in the Raman modes can indicate spin-phonon coupling in $LaFeO_3$ additionally, increased crystalline distortions can hinder the spin-lattice interactions, leading to adverse effects.The particles were found to be uniformly spherical, with an average size of 80 nm. The optical energy band gap of $LaFeO_3$ at the nanoscale was measured to be 2.1 eV. This structure was further confirmed through optical absorbance and Raman spectroscopy measurements, aided by spin-phonon coupling. The optical characteristics exhibit intriguing variations that correlate with the expected photocatalytic activities. The photocatalytic activity of $LaFeO_3$ nanoparticles was evaluated through the UV degradation of various organic dyes, including acid fuchsine (AF), methyl orange (MO), rhodamine B (RhB), and methylene blue (MB). Notably, the dyes underwent substantial photocatalytic degradation when exposed to visible light.

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A Computational Analysis on Chemically Reacting Stagnation Point Hybrid Nanofluid Flow over Stretched Surface under the Influence of Arrhenius Kinetic Energy

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Arrhenius kinetics; stagnation point flow; heat source/sink; chemical reaction

ABSTRACT

In this research, the impact of Arrhenius kinetics energy and chemical reaction over a stretching/shrinking sheet is studied in 2D stagnation point HNF flow. Heat source/sink and radiation flow are also considered This work stands out for its innovative hybrid nanofluid mathematical model, which addresses a previously unexplored subject with various implications. Appropriate similarity transformations lead to ordinary Differential equations. Bvp4c MATLAB method is applied along with appropriate boundary conditions and suitable similarity variations. Graphic representations are used to discuss pertinent parameters. Engineering quantities, such as Sherwood, Nusselt numbers, Skin friction coefficients are explained quantitatively in a tabular form. Temperature distribution slowdown versus higher Chemical reaction Rc ($0.1 < Rc < 0.5$) and Sc ($0.5 \leq Sc \leq 0.6$) parameters while decays for larger Prandtl number ($1.5 \leq Pr < 7$).

1. Introduction

Nanosized particles added to conventional fluids increased their thermal properties. Hybrid nanofluids are a new type of fluid that is being used in many areas of technology. due to its outstanding thermophysical properties. Arrhenius' formula, named after Swedish chemist Svante Arrhenius, relates the rate constant of a chemical reaction rate to temperature. This formula shows that as temperature increases, the rate constant of the reaction increases exponentially. It's a fundamental concept in chemical kinetics and is widely used in myriad areas of chemical engineering, chemistry to understand, predict reaction rates at different temperatures, it has innumerable applications, including measuring the rate of chemical processes and calculating energy of activation. When it comes to migration of binary chemical mixtures for species and energy transport, this

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Silver-doped ZrO_2-TiO_2 nanocomposite coatings on 316L stainless steel for enhanced corrosion resistance and bio applications

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ABSTRACT

The demand for ceramic based nanocomposite coatings has increased because they play a significant role in orthopedic implants and medical devices. Ceramic nanocomposites are inert and highly biocompatible, which improve corrosion resistance under physiological fluids. The ceramic nanocomposites were deposited (silver-doped ZrO_2/TiO_2) on SS 316L, and their biocompatibility, strength of adhesiveness, and corrosion resistance properties were studied. A detailed investigation of corrosion resistance, wettability, and biocompatibility concerning microstructures and the inclusion of silver as a dopant was conducted. The deposited films annealed at 600 C display crystallinity with the coexistence of TiO_2 rutile and ZrO_2 monoclinic phases. The surface morphology shows the average particle size on thin film is around 40 to 45 nm. The deposited films show a decreased corrosion current density (I_{Corr}) in potentiodynamic polarization curves, confirming the adequate protection against corrosion using simulated body fluid and phosphate buffer saline at 37_1 C. The surface wettability of coatings is hydrophilic, and it improves in-vitro compatibility. The apatite growth in SBF solution on the implant surface predicts a favorable condition for bone regeneration in the patient's body. The effect of silver dopant on improving apatite growth on implant surface is also discussed. From electrochemical impedance spectroscopy, the diameter of the semicircle in the Nyquist plot shows more than bare metal; the higher the diameter indicates the more resistive behavior of deposited films, which shows the effective corrosion resistance in the electrolytic solution. It is found that the biocompatibility and corrosion resistance are improved compared with bare SS 316L. Hence, ceramic nanocomposite coatings show great potential in the orthopedic implant industry.

1. Introduction

Stainless steel of grade 316L is the most used for medical implants, and it has a few challenges in biocompatibility and long-term performance. Nanocomposite coatings like bio-inert ZrO_2 and long-lasting materials like TiO_2 with dopants are used to improve their properties, such as corrosion protection and biocompatibility [1,2]. In this study, nanostructured coatings comprised of zirconium oxide (ZrO_2), titanium oxide(TiO_2), and silver nanoparticles (Ag NPs) as dopant material are used because of their high potential against bacteria and fungi without toxicity at lower concentrations [3]. Stainless steel (SS) had disadvantages, such as pitting and localized corrosion, which weakened implant mechanical properties. SS 316L can instantly form passive layers of chromium oxide (Cr_2O_3) and other elements present in SS, releasing those ions from implant materials and creating allergic responses in the human body. Furthermore, chromium oxide in stainless steel is toxic and can release ions from metal surfaces, potentially causing cancer and tissue damage and harming cell production. To reduce the uncontrolled release of metallic ions from implants, inert coatings like TiO_2, ZrO_2, ZnO, HAP, and their nanocomposites have been used [4–6]. Numerous researchers have developed composite coatings such as SiO_2- HAP [7], HAP-ZrO_2-Ag [8], HAP-TiO_2-Al_2O_3 [9], and TiO_2-Al_2O_3 [10] to improve biocompatibility and corrosion resistance. They have employed techniques such as spin coating [10,11], electro-deposition [12,13], spray coating [7,14], atomic layer deposition [15–17], and RF sputtering [18,19] to modify the surface and enhance its properties. Electrophoretic deposition (EPD) is also one of the most efficient techniques for coating HAP on orthopedic implant surfaces [20,21]. Physical vapor deposition techniques like RF sputtering are the most efficient for developing uniform thickness and highly dense coatings. The yield of the

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Comparative numerical study between MHD Forchheimer nano and hybrid nanofluid flows over stretching sheet under aligned magnetic field in the presence of radiation absorption

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ABSTRACT

This study investigates the mass and heat transfer properties of Ag-H_2O nanofluid MHD Forchheimer flows and Ag-MoS_2/H_2O hybrid nanofluid over two-dimensional linear stretching surfaces in aligned magnetic fields with absorption of radiation. The fluid experiences rotational motion around the vertical axis at a consistent angular speed. The system of nonlinear ODEs is derived from the set of nonlinear PDEs by use of similarity transformations. The BVP-5C shooting approach in MATLAB is then employed to solve the associated system of ODEs. As the Forchheimer number, porosity parameter, rotation parameter and aligned magnetic field exhibit an ascent, the velocity profile along the x-axis and y-axis experiences a decrement. Simultaneously, an augmentation in the magnetic parameter, thermal radiation and rotation parameter induces a heightened temperature profile. Additionally, greater values of the Forchheimer number, rotation parameter and magnetic parameters correspond to an increase in concentration profile. Furthermore, the results indicated an increased temperature profile in the Ag-MoS_2/H_2O hybrid nanofluid compared to that in the Ag-H_2O nanofluid for magnetic, rotation and radiation parameters. Also, the concentration profile of magnetic and rotation parameters along with the Forchheimer number were noted to be higher in the Ag-MoS_2/H_2O hybrid nanofluid compared to that in the Ag-H_2O nanofluid.

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Hybrid nanofluid; stretching sheet; radiation absorption; Forchheimer number; porosity parameter; aligned magnetic field

1. Introduction

Contemporary engineering and science have successfully enhanced heat and mass transfer techniques to achieve superior performance, energy efficiency, and sustainability in various applications. Advancements in materials, computational modelling, and control systems have facilitated this achievement. The primary sectors of use include biotechnology and pharmaceuticals, chemical catalytic reactors, fibre insulation, geothermal system, aerospace, nanotechnology, and automotive industries [1,2]. Conventional fluids like water, oil, ethylene glycol, and kerosene may not provide the desired thermal performance due to their low conductivity. Nanometer-scale solid particles are used in a base fluid to enhance its thermal properties, hence improving the fluid's performance. Nanoparticles refer to particles that are measured in nanometers, while the combination of these particles is referred to as nanofluid. Nanofluid provides multiple benefits in cooling systems, medical applications, materials processing, and improving heat transmission. The term 'nanofluid' was first introduced by Choi [3]. The utilization of nanofluid resulted in an improvement in both thermal conductivity and flow characteristics. Currently, the subject of nanofluids is still advancing, with continuing research being concentrated. Turkyilmazoglu [4] employed the Buongiorno nanofluid model to investigate the characteristics of various flow models. Using an oscillating flux model of nanofluid, Zaraki et al. [5] looked at how the size and shape of nanoparticles affected the properties of the fluid. Further investigation on the movement of nanofluids can be noticed in the referenced sources [6,7]. Vinod Kumar Reddy and Lakshmi Narayan [8,9] conducted research on heat and mass transfer experiments involving MHD convective flows of Maxwell and Williamson nanofluids on a porous stretched region while incorporating the Cattaneo-Christov system. Shamshuddin et al. [10] investigated the heat and mass

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Numerical Analysis of Three-Dimensional Magneto hybridized Nanofluid (Al_2O_3-Cu/H_2O) Radiative Stretchable rotating Flow with Suction

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ABSTRACT

The current study aims to investigate the heat generation/absorption, radiation, and chemical reaction impacts on a laminar flow, with an upward half-space three-dimensional, incompressible permeable, stretchable, rotating hybrid nanofluid (Al_2O_3-Cu/H_2O). Using appropriate similarity transformations, leading nonlinear governing equations were taken into account and were converted into ordinary differential equations. These equations were evaluated by deploying MATLAB's bvp5c feature. The resulting graphs assess velocity, temperature, and concentration for a range of effects. Additionally, Sherwood and Nusselt numbers and skin friction results were obtained. The findings were compared with previously published research.

Keywords-hybrid nanofluid; magnetic field; rotational stretching sheet; suction; heat source; chemical reaction

I. INTRODUCTION

Nanofluids have superior thermal characteristics compared to their base fluids and outperform them in heat transfer applications. They are primarily employed in industries to produce thermal power, chemical reactions, heat production, transportation, etc. Using Hybrid Nanofluids (HNFs), researchers have recently sought to increase heat transfer rates. HNFs have more than one type of nanoparticles mixed with a base fluid. They additionally have more favorable thermal properties than conventional base fluids and nanofluids. Authors in [1] presented a synthesis of a hybrid nanofluid of Al-Cu nanoparticles with water as the base fluid, in a two-step procedure and their thermophysical characteristics. Authors in [2] scrutinized developments in heat transfer an HNF Fluids with good electrical conductivity in a magnetic field are the focus of MHD research. Numerous applications, including flow measurement, nuclear waste disposal, polymer sheet extraction,

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MHD Flow and Heat Transfer of Carreau Fluid with Radiation and Heat Source Effect

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ABSTRACT

This article investigates the effects of radiation and heat transfer in the context of Magnetohydrodynamic (MHD) flow of a Carreau liquid over a non-linearly shrinking sheet, using a numerical approach. To tackle the problem, the governing partial differential equations (PDEs) are appropriately transformed into a set of ordinary differential equations (ODEs). These resulting non-linear ODEs are then solved numerically using the fourth-order Runge-Kutta (R-K) method, accompanied by the shooting technique to ensure accuracy and convergence. The study reveals various significant physical characteristics such as the Prandtl number, Weissenberg number, radiation parameter, heat source, and magnetic parameter, all of which play critical roles in influencing the flow and heat transfer behavior. These characteristics are analyzed and presented graphically, providing a clear understanding of how different physical parameters affect the MHD Carreau liquid flow. The findings offer valuable insights into the dynamics of such systems under varying physical conditions, contributing to the broader understanding of heat and mass transfer in complex fluids.

1. Introduction

The liquid that gratifies Newton's viscosity law is a Newtonian liquid. All the drinks are not pursuing the stress-strain connection. Those liquids not heeding Newton ordinance of consistency are comprehended as non-Newtonian liquids. The relationship between shear strain and shear rate is nonlinear for non-Newtonian juice. Because of numerous uses in engineering, medicine, biology, the deconstruction of non Newtonian liquids has evolved significantly [1].

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Comparative Study of Chemically Reacted Nanofluids SWCNT, MWCNT with Modeling of Cattaneo-Christov Heat Fluxes

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Cattaneo-Christov heat flux, SWCNTs, MWCNTs, chemical reaction, mass diffusion

ABSTRACT

This study presents a comparative analysis of chemically reacted nanofluids, specifically single-walled carbon nanotubes (SWCNT) and multi-walled carbon nanotubes (MWCNT), incorporating the advanced modeling of Cattaneo-Christov heat fluxes. It centers on the numerical examination modelling of Cattaneo-Christov heat fluxes to reveal the involvement of carbon nanotubes with the influence of chemical reaction and mass diffusivity of an MHD surface stretching causes nanofluid to flow. A comprehensive assessment is conducted regarding the impact of pertinent limitations on focus. For this, we applied the BVP-4C MATLAB procedure. The investigation includes the development of mathematical models and their numerical solutions to explore the thermal and fluid dynamic behavior of SWCNT and MWCNT nanofluids under chemical reactions. ϕ, M, α, Da, NR, γ, Rc, and Sc are varied to assess their impact on temperature, velocity, and concentration profiles are depicted through graphical representations. The Sherwood and Nusselt numbers and skin friction can also be recognised for practical reasons for numerous estimations of physical parameters. Comparative insights reveal distinct behaviors between SWCNT and MWCNT nanofluids, with SWCNT exhibiting superior thermal conductivity and enhanced heat transfer rates. This model's conclusions are relevant to biological fluids as well as industrial circumstances. These findings agree up to 99.9% with the previous studies and are represented by tabular values.

1. INTRODUCTION

Heat flux could be a vector field condition administering its developmental behavior includes what must be an objective time subsidiary. The vitality condition is defined utilizing Cattaneo-Christov heat fluxes show. The boundary layer influence is anticipated utilizing this demonstration. In specific, numerous research utilize the Fourier Law for the warm flux [1, 2]. Inside the setting of heat convection in a liquid incorporation of Cattaneo laws started with Straughan [3]. Cattaneo quantity is elevated sufficient, the convection prepares changes from fixed convection to oscillating convection with more tightly cells, and the warm unwinding impact gets to be considerable. Modelling of Cattaneo - Christov heat fluxes expects the defeat of thermal boundary thickness as related to Fourier law by Ullah et al. [4]. Ahmad et al. [5] demonstrate the Cattaneo-Christov with entropy generation and variable thermal relaxation time is the major focus of the present investigation. Micropolar fluid that absorbs heat with the presence of partial slip and mixed convection is investigated. Reddy et al. [6] deliberated Cattaneo-Christov heat fluxes on heat mass transfers of Casson nanofluid across an improving penetrable regime, using the Soret-Dufour mechanism and thermal radiation. Dadheech et al. [7] see how non-linear chemical reactions across permeable and vertical plates affect entropy formation in Williamson fluid flow and velocity slip. Sarma and Paul [8] the complex behaviour of dusty copper-titanium dioxide and water shear-thickening Carreau hybrid nanofluid flow within a porous vertical cylinder, taking into account the effects of viscous dissipation and the Cattaneo-Christov heat flux model. Sidahmed et al. [9] explained the complex behaviour of dusty copper-titanium dioxide and water shear-thickening Carreau hybrid nanofluid flow within a porous vertical cylinder, taking into account the effects of viscous dissipation and the Cattaneo-Christov heat flux model.

We can raise Incorporating nanoparticles in base fluids improves their thermal conductivity, or particles with a size between one and one hundred nanometers. Even though there are many distinct types of nanoparticles, such as nonmetals (graphite, carbon nanotubes), metals, carbides, and nitrides, when it comes to materials that, carbon nanotubes are the most favorable.

A carbon tube having a breadth within the nanometer size is known as a carbon nanotube (CNT) or nanoscale tube. 0.5 to 2.0 nanometer size of single walled carbon nanotubes are

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ORIGINAL PAPER

Computational study of magnetized 3D revolving hybrid nanofluid with non-linear thermal radiation and heat source/sink over a stretching sheet

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Abstract

Our current research explores the computational analysis of magnetized 3D revolving hybrid nanofluid flow with nonlinear thermal radiation and heat source/sink effects over a stretching sheet. The problem is modelled using the governing equations for mass, momentum, and energy, which are solved numerically by employing the BVP5C and Runge Kutta shooting techniques and using MATLAB. The concurrent study of the substrate, the magnetic field with nonlinear thermal radiation and nonlinear heat source/sink effects, and fully three-dimensional partial differential equations are the innovations of this work that offer valuable insights into enhancing thermal and mass transport efficiency. The implications of dimensionless variables, such as thermal radiation $1 < Rd < 1.9$, temperature ratio parameter $1 \leq \theta_w \leq 2.5$, space-dependent heat source/sink $1 < A^* < 4$, temperature-dependent heat source/sink $1 \leq B^* \leq 2.5$, porosity parameter $1 < K < 7$, magnetic parameter $1 < M < 7$ on the velocity along the x and y-axis, temperature profile, concentration distributions, and thermal performance are thoroughly examined through visualization. In addition to this skin friction (local shear stress), (Nusselt, Sherwood number) heat, and mass transfer rate impacts are also demonstrated in tabular forms. Our significant findings indicate that with an increment in the Porosity parameter K and magnetic parameter M, the velocity decelerates along both the x and y-axes. Additionally, as the values Rd, A^*, B^*, and θ_w rise, there is a corresponding enhancement in the temperature profile. With an appreciation of Schmidt number Sc and chemical reaction parameter Re, there is a decay in the concentration profile. The Nusselt number demonstrates a downward trend, when Rd, A^* and B^* elevates. Moreover, for the magnetic parameter and M, rotation parameter s the skin friction along the x and y-axes are enhanced on the other hand Nusselt and Sherwood numbers depreciate gradually. This model has been thoroughly validated with existing data and has shown outstanding accuracy. The results demonstrate that the hybrid nanofluid's heat transfer characteristics are significantly improved under the applied conditions, offering the potential for enhanced thermal performance in engineering applications. Following Karl Pearson's coefficient of correlation method upon calculation we found that there exists a perfect positive correlation close to 1, between the current and previous literature outcomes for the skin friction for the stretching ratio parameter (λ). The findings of this study are particularly valuable for applications where efficient heat transfer is critical. For instance, in heat exchangers, cooling systems, and energy-efficient devices, hybrid nanofluids can enhance thermal performance due to their superior heat transfer capabilities. The use of non-linear thermal radiation and heat source/sink effects further optimizes thermal management in systems exposed to high heat flux or magnetic fields. Therefore, this research provides important insights into the design of advanced materials and systems aimed at achieving enhanced thermal performance in industrial applications.

Keywords Hybrid nanofluid · Temperature ratio parameter · Nonlinear thermal radiation · Heat source/sink parameter · Magnetic parameter · Chemical reaction parameter

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Matrix applications in cryptography

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The central idea of this article is to propose modified methods of Caesar and Hill algorithms. We incorporated some mathematical concepts namely multiplicative inverse, additive inverse and bijection in order to present some innovative ciphers and keys. Here we have shown the significant role of matrices in enciphering and deciphering some secret messages. Moreover we introduced one modified Caesar Algorithm in third illustration by which one case cipher the plain texts and those ciphers are very hard to break by black-hat-hackers.

Topics

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ARTICLE

Melting Flow Analyzation of Radiative Riga Plate Two-Phase Nano-Fluid Across Non-Flatness Plane with Chemical Reaction

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ABSTRACT

There is a strong relationship between analytical and numerical heat transfers due to thermodynamically anticipated findings, making thermo-dynamical modeling an effective tool for estimating the ideal melting point of heat transfer. Under certain assumptions, the present study builds a mathematical model of melting heat transport nanofluid flow of chemical reactions and joule heating. Nanofluid flow is described by higher-order partial non-linear differential equations. Incorporating suitable similarity transformations and dimensionless parameters converts these controlling partial differential equations into the non-linear ordinary differential equations and resulting system of nonlinear equations is established. Plotted graphic visualizations in MATLAB allow for an in-depth analysis of the effects of distinguishing factors on fluid flow. Innovative applications of the findings include electronic cooling, heat transfer, reaction processes, nuclear reactors, micro heat pipes, and other related fields. If the exponential index increases, however, the thermal profile becomes worse. By comparing the current findings to those already published in the literature for this particular example, we find that they are highly congruent, therefore validating the present work. Every one of the numerical findings exhibits asymptotic behavior by meeting the specified boundary conditions.

KEYWORDS

Non-flat sheet; melting surface; chemical reaction; 2-phase nano fluid

Nomenclature

a	Width of magnets between electrodes
U_e	Physical parameter related to a stretching sheet
b	Physical parameter related to a stretching sheet
C	Concentration of the nano fluid
T_m	Melting temperature

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Numerical performance of Hall current and Darcy-forchheimer influences on dissipative Newtonian fluid flow over a thinner surface

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Viscous dissipation
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Darcy-Forchheimer
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Hall parameter
Joule dissipation

ABSTRACT

Present problem concerns may be found in a wide variety of various industries and can takes a shape of round toroid's, cones, cylinders, domes (Axisymmetric shape), and other shapes as well. When it comes to actual applications, they are represented by aerosol cans, submarine pressure hulls, cooling towers, offshore drilling rigs, radomes, nuclear reactors, and other similar objects. The aim of this research is to improve the performance of MHD flow using Darcy-Forchheimer, viscous dissipation, porous and a heat source. The viscous convective permeable flow flowing over a bullet-shaped item is examined. Using similarity transforms, the structure of nonlinear differential equations are converted into dimensionless ODEs. Employing bvp4c shooting technique to decrypt the findings. Influences of physical entities on velocity and temperature were sketched and briefly described. Physical behaviors of skin friction and heat transfer rates are explored. The fluid velocity drops for Eckert number Ec as $s < 1.0$, and rises as $s > 1.0$. The fluid velocity improves with Darcy-Forchheimer parameter Fr when stretching ratio $s < 1.0$ or $= 1$ or > 1.0. The enhancement of fluid temperature is observed with enhanced Ec. A enhance in the Darcy-Forchheimer parameter Fr associated with improvement in skin-friction. In the absence of viscous dissipation, hall current, porous and Dacy-Forchheimer influences, the outcomes are in splendid covenant with those of previous studies.

1. Introduction

In many technical and industrial applications, including polymer processing, aerodynamics, and heat transfer improvement, the study of flow across stretched surfaces is very important. Many industrial operations, such as the continuous casting of metals, the extrusion of plastics, coating procedures, and even natural occurrences like the stretching of biological tissues, include the interaction of a fluid with a flexible surface. This study offers an organized and thorough evaluation of previous research on the present modeling concerned. This assists in our comprehension of the problems raised by its historical context, present state, and range of applicability.

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An exploration of diffusion-thermo and radiation absorption impacts on non-Newtonian MHD flow towards two distinct geometries with biot number

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ARTICLE INFO

Keywords:
Radiation absorption
Diffusion thermo
Radiative quadratic heat flux
Wedge and cone

ABSTRACT

Temperature and liquid flow monitoring are required in many industrial applications in order to maximize machine performance. When exploring polymers, fabricating synthetic films and transparent materials, and manufacturing metal-based equipment, frictional forces and thermal flow rates need to be controlled. The significance of the study of prominent characteristics of Diffusion-Thermo, Quadratic thermal radiation and radiation absorption over a permeable stretching geometry are discussed. Similarity transformations reduced the boundary layer partial differential to an ODE. The acquired system of ODEs is solved in numerical-manner using MATLAB bvp4c. The distributions $f'(\eta)$, $\theta(\eta)$ and $\varphi(\eta)$ are described graphical aspect, with specified governed parameters. As Diffusion thermo parameter raises, temperature field enhances. As radiation absorption raises, the temperature and velocity enhance and concentration decreases. A rise in radiation absorption parameter causes a raise in the buoyancy, which in turn raises the flow rate, and that this is reflected in the velocity profiles. The radiation absorption parameter raises temperatures nearer porous boundary layer and lowers concentration. Rising temperature ratio parameter ow values were accompanied by rising temperatures. Temperature is enhancing when improving of Biot parameter. The skin-friction is heightened with raising 'n' values. Nusselt number is declined, raising values of Df. The Sherwood number is enhanced with raising values of 'Sc'. An incorporation of Diffusion thermo, Quadratic thermal radiation and radiation absorption effects in a nano-Carreau flow across Wedge and Cone is the novelty. The flow of a boundary-layer across a wedge gets made growingly significant, not long ago, owing to its many practical applications, including those in medical, bioengineering, crude oil extraction, nuclear power plants, a polymer extrusion process, production of plastic sheet, metal spinning, friction drag of a ship, and electronic gadgets, etc. This study will be extended by incorporating micro-polar, tangent hyperbolic, Sutterby, with distinct non-Newtonian fluids.

1. Introduction

An important part of engineering and physics problems is the heat transfer attribute. Cooling, cooling in nuclear reactors, tissue heat conduction, magnetic drug targeting and many more are among these applications. Heat transfer rate control is a useful method of improving the efficiency of a variety of processes involved in electronic cooling or heat exchange. The thermal relaxation time is commonly used to assess and control the time required for heat to leave a heated region. The Cattaneo-Christov flux [1,2] interprets the heat transfer through the

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Dynamics of non-Newtonian Casson fluid and Cattaneo-Christov heat flux impacts on a rotating non-uniform surface due to Coriolis force: A comparison study of ANFIS-PSO and ANN

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ARTICLE INFO

Keywords:
Coriolis force
Casson flow
Cattaneo-Christov heat flux
ANFIS-PSO and ANN

ABSTRACT

Aim of the present study: It must study liquid flow over surfaces above the earth because its surface rotation stimulates liquids heated amid the sun. Consequently, the Coriolis impart force is investigated on Casson convective flow fluid with Cattaneo-Christov heat flux over the rotating paraboloid upper surface.
Significance of the present study: The simultaneous effects of the Lorentz force and Coriolis force occurring due to MHD flow contribute significantly to solar wind, sunspots, and more physical natural phenomena. As a result, Navier-Stokes equations governing the flow are derived and incorporated with the appropriate body forces.
Methodology: PDEs are converted to ODEs by identical variants/variables that make the governing equations non-dimensional. The results of this problem are represented graphically using BVP4C.
Conclusion: In the present study, some of the significant results are: While both ANN and ANFIS-PSO could accurately forecast the truth values, we found that ANFIS-PSO is more accurate; as the temperature rises, β and Gr consider and resist heat transmission with K and Sc, While Ec and Nt increase the concentration, K, β, Gr, Nb, and Sc impede mass transfer. table 3 compares the current study's findings with those of the previous research; the results are nearly identical, demonstrating the precision and accuracy of the current model.

Nomenclature:

Name	Corresponding Symbol
Velocity along x_1, y_1, z_1 directions	u_1, v_1, w_1
Prandtl number	$Pr = \frac{\rho C_p \nu}{k}$
Rotation parameter	$K = \frac{4\Omega R}{U_0^2 (x_1' + b)}$
Thermal relaxation parameter	$\gamma = \lambda * b$
Grashof number	$Gr = \frac{g\beta^*(T_w - T_\infty)}{U_0^2 (x_1' + b)^{2m+1}}$
Thickness parameter	$\chi = A\left(\frac{m+1}{2}\frac{U_0}{\nu}\right)^{1/2}$

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(continued)

Eckert number	$Ec = \frac{U_0^2}{c_p (T_w - T_\infty)}$
Brownian motion parameter	$Nb = \frac{\tau D_B}{\vartheta_f}$
Thermo phoretic parameter	$Nt = \frac{\tau D_T (T - T_\infty)}{T_\infty \vartheta_f}$
Schmidt number	$Sc = \frac{\nu_f}{D_B}$
Skin friction in the directions of x and z	Cf_{x_1}, Cf_{z_1}
Nusselt digit	Nu_x
Sherwood number	Sh
Artificial Neural Network	ANN
Mean Square Error	MSE
Particle Swarm Optimisation and the Adaptive Neuro-Fuzzy Inference System Approach	ANFIS-PSO
Partial Differential Equations	PDEs

(continued on next page)

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ORIGINAL ARTICLE

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A multiple applications study of motile microorganisms past a vertical surface with double-diffusive binary base fluid

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Abstract

This study investigates the various uses of density of motile microorganisms in the context of the flow of a binary base fluid with double diffusion past a vertical surface. The research aims to comprehend the interactions between motile microorganisms and the fluid dynamics, as well as the heat and mass transport mechanisms in this system. The analysis involves mathematically constructing the governing equations, transforming them into dimensionless nonlinear ordinary differential equations using similarity transformations, and numerically solving them using the MATLAB bvp4c solver. An analysis of the influence of several parameters on the profiles of velocity, temperature, concentration, nanoparticle concentration, and density of motile microorganisms is conducted using graphical representation. The findings demonstrate that boosting the thermophoresis parameter intensifies the temperature profile. In addition, an increase in the nanofluid Schmidt number results in a larger concentration of nanoparticles, whereas a higher bioconvection Lewis number reduces the density of the motile microorganism profile. These findings may find use in biomedical engineering as well as industrial processes that include enhancing the efficiency of mass transfer and bioconvection. Numeric simulation prophesies

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Investigating the Thermal Efficiency of Al_2O_3–Cu–CuO–Cobalt with Engine Oil Tetra-Hybrid Nanofluid with Motile Gyrotactic Microorganisms Under Suction and Injection Scenarios: Response Surface Optimization

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Nanofluids, due to their complex behavior and enhanced thermal properties, are utilized across chemical, biotechnology and thermal engineering disciplines. They are particularly integral to heat transfer processes in heavy machinery and vehicles. This study introduces a novel method for analyzing heat transfer within a tetra nanofluid system through a hybrid analytical and numerical approach. Our research primarily examines the dynamics of a magneto Williamson hybrid tetra nanofluid embedded with motile gyrotactic microorganisms. The study is designed around two scenarios: one investigates the behavior of an Al_2O_3–Cu–CuO–Cobalt/Engine oil nanofluid under suction conditions, and the other under injection conditions. By employing similarity variables, we transform the original fluid flow equations into nonlinear differential equations to further explore the influence of various physical parameters. Such parameters include the nanofluid temperature and velocity as well as the concentration of nanoparticles, and the volume fraction of motile gyrotactic microorganisms. The optimization of the numerical results for skin friction, Nusselt number, Sherwood number and microorganisms

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Stock market index prediction based on market trend using LSTM

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ABSTRACT

The stock market data analysis has received interest as a result of technological advancements and the investigation of new machine learning models, since these models provide a platform for traders and business people to choose gaining stocks. The business price prediction is a challenging and extremely complex process due to the impact of several factors on company prices. The numerous patterns that the stock market goes, they have been the focus of extensive research and analysis by numerous experts. There are several large data sets accessible, an artificial intelligence and machine learning techniques are developing quickly, and because of the machine's improved computational power, complex stock price prediction algorithms can be developed. This paper presents stock market index prediction based on market trend using long short-term memory (LSTM). Using built-in application programmable interface (API), Yahoo Finance offers a simple method to programmatically retrieve any historical stock prices of an organization using the ticker name. The standard and poor's 500 index (S&P 500 index) include the firms that have been taken into consideration here. Utilizing the selected input variable, single-layer and multi-layer LSTM models are implemented, and the measurement parameters of mean absolute error (MAE), root mean square error (RMSE), and correlation coefficient (R) are used to compare each performance. Nearly all of the real closing price's curve and the prediction curve's closing price for test data overlap. A potential stock investor may benefit significantly from such a prediction by using it to make well-informed choices that would increase his earnings.

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1. INTRODUCTION

The primary objective of the original methods, a common person may trade stocks make investments, profit from businesses that sell a portion of themselves on this platform is the stock market [1]. A developing country like India experiences rapid economic expansion mostly supported by the stock market. Therefore, the development of our country and other emerging nations may be impacted by stock

Arduino-Based Emergency Route Clearing Between Vehicles

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T. Anitha, P. Selvam, M. Nagarajapandian, T. Manikandan, S. Sarmitha & M. Aravind

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Abstract

This chapter focuses on utilizing vehicle-to-vehicle communication using Radio Frequency (RF) technology to ensure swift passage for ambulances in emergency situations. The system employs Arduino as the main microcontroller unit (MCU) to facilitate communication between vehicles. By leveraging the power of RF communication, the system enables ambulances to alert front vehicles about their approach, urging them to make way for the emergency vehicle. The aim of the chapter is to reduce response time for ambulances, thereby potentially saving lives in critical situations. The suggested technique entails employing vehicle communication to transmit messages that notify vehicles and offer precise guidance in navigating crowded signalized junctions with the objective of facilitating efficient clearance.

Prediction of Distinctive Human Behavioral Activity Using PIFP and Big Data Methods

Maddali Aravind, Gundala Nageswara Rao, B. Vijay, and B. Ramesh

Abstract Urban areas are shifting more and more these days. One of the hardest areas to deal with, given the heavy traffic in town centers, is the healthcare sector. As a result, practically every city on the planet is investing in creating a better ecosystem. Devices like as sensors and clever motors are used in those conversions. The sensors that produce enormous amounts of accurate data are analyzed for services in smart towns. The goal is to develop a model that makes advantage of smart devices by analyzing how people use them. Additionally, to determine and use the energy needed by the behavior, group investigations and forecasts are used successively. Since the majority of users are primarily recognized by their daily routines, identifying these routines enables the recognition of irregular movement, which will reveal people's issues managing themselves. Examples of such challenges include forgetting to prepare meals or take a shower or bath. Our research focuses on the need to create life patterns at the level that are directly related to human activity. The analysis makes use of UK Domestic Appliances to examine the suggested instrument. Level Electricity Informational Index (UK-Dale): factual data on intensity consumption collected for five residences in Southern England with 116 apparatuses between 2011 and 2018 with a time aim of six seconds. Additionally, profits are maintained through efficient mining operations. The massive amounts of data generated by the smart houses are managed by the Hadoop biological system, which in turn powers the distributed preparation. The output of unique patterns of human activity from the use of appliances, as well as the precision of both short- and long-term forecasts.

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The Augmentation of Social Media and Its Notable Impact on Sentiment Research Review Systems for Public Movie Theaters Using Deep Learning

Anil Kumar Kanamarlapudi, Nalabothu Siva Rama Krishna, Dasari Reventh Raj, and Potnuru Prasanthi

Abstract Sentiment analysis of the written text of social media comments is useful for figuring out what the public thinks about the product evaluation. The text categorization task is at the heart of sentiment analysis, and various phrases contribute differently to the categorization. Dependent mostly on the text comments left by the product's clients, the categorization indicates whether the product is good or bad. The technique will be put to the test using the text comments that customers have gathered from reviews of goods on social media and e-commerce sites. The outcome will show whether or not the product has received favorable or negative reviews. Research on sentiment analysis is a recent development that has applications in numerous other domains. Sentiment analysis examines evaluations, remarks, and viewpoints regarding a specific subject, occasion, or item. Sentiment clustering facilitates the division of the review data into several sets that are pertinent and significant for the goals. Natural language data are taken into account throughout the clustering process, and the data are then clustered accordingly.

Keywords Sentiment analysis · Movie reviews · Deep learning · Performance evaluation

1 Introduction

Sentiment analysis is becoming more and more important as social media, including blogs, microblogs, Twitter, forum debates, critiques, and social networks, grows. Natural language processing and text mining are strongly related to sentiment analysis. Sentiment mining, also referred to as sentiment analysis, is the field of study

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Understanding Consumer Behavior in the Retail Sector Using RFM Segmentation and Machine Learning: An Analysis

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Abstract

The current study uses advanced analytics to examine the intricate dynamics of consumer behavior in the Indian retail sector. We created a preprocessed retail dataset with 495,478 retail clients in it. The study aims to forecast consumer behavior, the study uses a variety of techniques, such as temporal analysis, Box-Cox transformation, and a marketing analysis method called RFM (Recency, Frequency, Monetary) segmentation. Additionally, it makes use of a variety of supervised machine learning models, such as RandomForest, AdaBoost, ExtraTrees, LGBM, and XGBoost, among which ET and XGBClassifier have demonstrated the highest levels of accuracy in customer lifetime value predicting. The study stated that the machine learning models' performance measures are remarkable: 92.40% accuracy, 92.27% precision, 92.40% recall, 92.28% F1 score, and 97.39 AUC. The study's findings validated the durability of machine learning techniques and demonstrated the model's accuracy in predicting customer lifetime value clusters. Important conclusions from RFM analysis show that it has a special value in offering important insights into customers and their behavior. This study sets a new benchmark for retail analytics by providing a scalable and effective technique for research projects in the future that use data analytics to understand and forecast customer behavior across various business entities.

Keywords: *Consumer Behavior Analytics, Supervised Machine Learning, Retail Analytics, RFM method*

1. Introduction

The RFM (Recency, Frequency, Monetary) analysis technique is a straightforward yet highly effective method for understanding and evaluating consumer behavior based on purchase history. It quantitatively categorizes and classifies customers based on the recency, frequency, and monetary value of their most recent transactions. The primary goal is to identify and target the most valuable customers to execute focused and precision-targeted marketing campaigns. While RFM analysis provides a quantitative method to categorize and classify customers based on transactional behavior, it is important to recognize that, like any model, it may incorporate biases related to demographic characteristics not included in the analysis and the methods used for data collection. Therefore, while RFM offers a robust framework, its outcomes must be interpreted with an understanding of these limitations. This technique is based on the widely recognized marketing principle that "80% of your business is generated by 20% of your customers." RFM is a strategic methodology employed to analyze and estimate the value of a client based on three crucial data points: recency, frequency, and monetary value. The recency metric indicates the timing of the consumer's most recent transaction, frequency measures how often the consumer makes purchases, and monetary value represents the amount of money spent by the customer.

RFM analysis is a beneficial approach that can provide essential insights into clients and their behavior. However, it is important to acknowledge that this strategy does not consider other critical factors influencing the customer experience. To achieve superior outcomes, more comprehensive marketing techniques might include additional elements, such as the type of item purchased or client campaign responses. Furthermore, RFM analysis does not account for client demographics, such as age, gender, and ethnicity. Thus, marketers must employ a more extensive and sophisticated strategy that considers a broader array of aspects to gain a more precise and practical understanding of customers. The literature offers numerous methods for data integration that can be useful in this context.

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Prevalence of occupational Stress among Healthcare Professionals of Tier-II Cities in India

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ABSTRACT

This observational cross-sectional study aims to assess the prevalence of occupational stress among healthcare professionals serving as nursing staff in Tier II cities in India. Using a simple random sampling technique, 196 nurses were selected from diverse healthcare facilities in Tier II cities of India. Standardized questionnaires were utilized to collect comprehensive data on stress levels and related factors, including workload, organizational support, and coping mechanisms. Statistical techniques such as one-way ANOVA tests, correlation and regression analysis, and path analysis were applied to analyse the data, ensuring data integrity and reliability for meaningful conclusions regarding occupational stress among nursing staff. The findings indicate a high prevalence of occupational stress among the respondents. Stress levels were notably elevated under conditions of high workload, while they exhibited a negative correlation with organizational support and a positive work environment. Structural equation modelling further revealed a robust association between stress and its related factors. While this study offers valuable insights into occupational stress among healthcare professionals in Tier II cities of India, it is subject to certain limitations. The study's cross-sectional nature restricts the ability to establish causality, and the findings may not be generalizable beyond the sampled population. Future research could employ longitudinal designs to explore the dynamic nature of stress in this context. This study contributes to the body of knowledge by shedding light on the significant issue of occupational stress among healthcare professionals in Tier-II cities of India. The findings underscore the necessity for tailored interventions aimed at reducing stress levels among these professionals, ultimately enhancing the quality of healthcare delivery in the region.

Keywords: *Occupational stress, Healthcare professionals, Nursing staff, Workload, Organizational support, Work environment, Structural equation modelling*

Introduction

Occupational stress among healthcare professionals is a pervasive issue globally, with significant implications for both individual well-being and patient care outcomes. In the context of Tier-II cities in India, where healthcare resources may be more limited compared to metropolitan areas, understanding the prevalence and determinants of occupational stress is of paramount importance. Healthcare professionals, particularly nursing

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The Evolution of Innovative Financial Instruments in India's Securities Market: Trends and Investor Dynamics

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KEYWORDS
Indian securities markets, financial innovation, investor interest, green bonds, regulatory reforms, market efficiency

ABSTRACT

Indian securities market has witnessed tremendous changes over the last decade, with such changes having been driven both by regulatory reforms and the development of innovative financial instruments. The paper explores dynamic changes in the market brought about by various regulatory interventions, technological advancements, and innovative instruments that have broadened the investor base and strengthened market integrity. Apart from setting up Social Stock Exchange, important innovation products such as green bonds, REITs, and InvITs are brought under scrutiny to find out their impact on investor interest and the way to achieve good performance. The research would aim to enlighten stakeholders, ranging from regulatory authorities to global investors, on trends related to India's securities market changing structure towards investment destination potential.

JEL Codes G10 · G28

Research Analysis Approach on Integrated Risk Management Model for Financial Institutions

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Abstract: Financial institutions face various risk factors, and with the widespread impact of the subprime crisis, there has been an increasing focus on risk management. To improve risk management mechanisms, techniques and skills, this paper first outlines traditional risk management models. It then introduces an integrated risk management model, which comprises three stages: the risk mechanism, a quantification analysis system, and optimizing decision-making. The paper further analyzes each of these three stages in detail. Finally, by comparing the traditional models with the integrated approach, the integrated model offers a new method for assessing and calculating risks, ultimately helping institutions achieve their desired profits.

Keywords: Risk Management, Integrated Risk Management Model, Decision Making

I. INTRODUCTION

Modern financial risk management techniques, such as the Value-at-Risk (VaR) model, along with classical financial theories like the Capital Asset Pricing Model (CAPM) and Black-Scholes option pricing theory, are largely based on Fama's Efficient Market Hypothesis (EMH). However, since the 1970s, numerous anomalies have been observed in global financial markets, including the presence of high peaks and fat tails in asset returns, sudden market collapses, and long-term dependencies in financial time series. To gain new insights into these phenomena, researchers and risk managers have turned to the emerging field of fractal theory.

Studying the movement patterns of financial asset time series through the lens of multifractal theory is akin to observing the same object through different magnifications. This approach allows for a deeper and more comprehensive understanding of market fluctuations, providing a clearer picture of the financial market's dynamics. Such detailed analysis is a key step in improving risk management practices in financial markets. Some researchers have demonstrated the potential of multifractal analysis to better understand financial time series, with some even developing volatility forecasting models for financial assets. For instance, Mr. Deng has created a stock price volatility forecast model based on clustering methods applied to multifractal spectrum parameters. Additionally, a market risk measure has been proposed that relies on two primary parameters from the multifractal spectrum.

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Effects of Macroeconomic Factors on Indian Stock Market Performance: An Empirical Analysis

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ABSTRACT

This paper examines the macroeconomic factors that influence the performance of the Indian stock market index, NIFTY 50. The study is distinctive in that it employs both primary and secondary data to draw conclusions. Initially, nine years of monthly data on macroeconomic variables are analyzed using logistic regression against the monthly performance of the NIFTY 50 index. In the second stage, the results of the regression analysis are corroborated with primary data collected through face-to-face interviews with stock market experts. The secondary data analysis indicates that the Dow Jones Index and exchange rate movements are the primary determinants of the NIFTY 50 index. However, experts suggest that other factors, such as political stability, economic conditions in developed countries, and India's bilateral relations with other nations, are also crucial in forecasting the movement of the NIFTY 50 index. This study is the first in the Indian context to combine domestic and international factors to forecast the NIFTY 50 index movement.

Keywords: Macroeconomic variables, India, Logistic regression, NIFTY

1. Introduction

Several economic indicators, commonly referred to as macroeconomic variables, are instrumental in analyzing the performance and behavior of the stock market. These indicators reflect the overall state of the economy and include factors such as the business environment, interest rates, inflation, exchange rates, monetary policy, and foreign direct investment (FDI). The study of variables that influence stock returns is one of the most prominent areas of financial research. According to the fundamental stock valuation model, a stock's price is determined by the "anticipated cash flows" and the "required risk-adjusted rate of return," which is based on the stock's inherent risk. Both the risk-adjusted discount rate and a firm's cash flows are influenced by macroeconomic data, which, in turn, affects stock market performance (Dutta et al., 2012). The overall stock market return is thus dependent not only on macroeconomic factors but also on the performance of individual companies. Numerous empirical studies conducted in developed countries [Morelli, (2002); Flannery & Protopapadakis (2002); Gjerde & Saettem (1999); Adam & Tweneboah (2008)] as well as in emerging markets [Yartey, (2010); Tangjitprom (2011)] provide substantial evidence supporting the relationship between macroeconomic drivers and stock market performance.

In India, macroeconomic variables such as interest rates, inflation, monetary policy, exchange rates, and FDI have undergone significant changes over the past decade. The Indian economy, measured in terms of GDP, has expanded from 1.83 trillion USD in 2012 to 3.25 trillion USD in 2022 ("India Is Now a US$ 3.1 Trillion Economy," 2022). Correspondingly, the broader stock market index, NIFTY 50, has risen from 5,339 in March 2012 to an all-time high of 18,105 in December 2022. This growth in the NIFTY 50 index, with a compounded annual growth rate (CAGR) of 13%, has been shaped by the evolving macroeconomic landscape in the country.

The changing dynamics of the business and economic environment have made financial markets more efficient. Stock markets now respond swiftly to any news, whether it pertains to political challenges, war situations, regulatory shifts

A COMPARATIVE STUDY ON WOMEN EMPOWERMENT IN PRIVATE SECTOR BANKS (WITH SPECIAL REFERENCE TO ICICI AND HDFC IN ANDHRA PRADESH)

Salma. Syed
Dr. R. Srinivasa Rao

ABSTRACT

This study delves into the realm of women empowerment within the Indian banking sector, focusing on private sector banks with a specific emphasis on ICICI Bank and HDFC Bank operating in Andhra Pradesh (AP). The abstracted findings are derived from an extensive comparative analysis of these banks' approaches, policies, and initiatives aimed at fostering gender equality and empowerment among female employees. Through a comprehensive examination, this research sheds light on the existing disparities and advancements in women's empowerment initiatives within the banking industry, particularly in the AP region. The study employs a mixed-methods approach, incorporating both quantitative and qualitative methodologies to gather and analyze data. Quantitative data is obtained through structured surveys administered to employees of ICICI and HDFC Banks in AP, while qualitative insights are derived from interviews with key stakeholders, including bank officials, human resource managers, and female employees. Additionally, secondary data from relevant literature and reports are synthesized to provide a comprehensive overview of the subject matter. The analysis focuses on several key dimensions of women's empowerment, including recruitment and retention practices, career advancement opportunities, provision of support services, gender-sensitive policies, and organizational culture. Statistical tools such as descriptive statistics, chi-square tests, and thematic analysis are employed to interpret the collected data and draw meaningful insights.

Keywords: Women Empowerment, Private Sector Banks, Workplace Policies, Employee Welfare

INTRODUCTION

Empowerment is a versatile concept, spanning a spectrum from the specific to the universal, and from the ordinary to the extraordinary. Embedded within the term "empowerment" is the essence of power, signifying the ability to exercise choice. Moreover, empowerment embodies a pathway to transformation, symbolizing a pivotal stride toward meaningful change. When exploring the concept of power, it's imperative to quantify the act of making decisions. Decision-making can be delineated into various dimensions, including primary choices and secondary choices. Primary choices encompass decisions related to livelihood, residence, settlement, and mobility, as well as choices regarding family planning and selecting companions. These pivotal life decisions are crucial for shaping one's quality of life and establishing its overarching structure. The term itself frequently serves as a catalyst, often employed in discussions analyzing power dynamics, inequality, and oppression.

A woman is a man's compatriot, possessing identical intellectual capacities. She has equal rights as her male counterparts and has the autonomy of freedom and sovereignty. She is not circumscribed by any boundary but has limitless opportunities. Both man and woman go hand in hand and none is supreme in the absence of

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