

3.2.1 Grants received from Government and non-governmental agencies for research projects, endowments in the institution during the year (INR in Lakhs)

3.2.2 Number of departments having Research projects funded by government and non-government agencies during the year

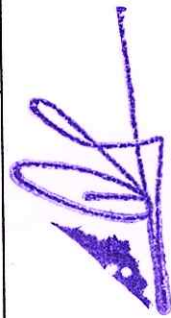
3.2.3 Details of teachers recognized as research guides

3.2.4 Details of Departments having research

# 2024-2025

3.2.1 Details of grants received from Government and Non-governmental agencies for research projects, endowments, Chairs in the institution during the year (INR in lakhs), 3.2.2 Details of teachers having research projects during the year & 3.2.4 Details of Departments having research projects funded by Government and/or Non-government agencies during the year

Name of the Principal Investigator/ Co-Investigator (if applicable)	Department of the Principal Investigator/ Co-Investigator	Name of the Funding Agency	Type (Government/Non-Government)	Funds provided (INR in lakhs)	Month and Year of receiving the grant	Duration of the Project
Dr. V.Venkatarao, Professor & HoD Dr. A.V. Nageswararao	ECE	M/S Mittapalli Spinners Limited, NRT	Non-Government	4.60	Feb-23	2 Years
Dr. A.V. Nageswararao (PI) & Dr. S.V.N. Sreenivasu (Co-PI)	ECE	Krinydi Technologies, Hyderabad	Non-Government	4	Dec-22	2 Years
Dr. S.V.N. Sreenivasu	CSE	SAK informatics	Non Government	0.92	Aug-2025.	10 Months
Dr. B.Jhansi Vazram	IT	M/S Mittapalli Spinners Limited, Narasaraopet	Non Government	1.25	September, 2024	1 Year
Dr. M.Sireesha	IT	M/S Mittapalli Spinners Limited, Narasaraopet	Non Government	1.54	September, 2024	1 Year
Dr. K.Soma Sekhar	IT	M/S Mittapalli Spinners Limited, Narasaraopet	Non Government	0.95	September, 2024	1 Year
Dr. R.Satees Kumar	IT	M/S Mittapalli Spinners Limited, Narasaraopet	Non Government	0.70	September, 2024	1 Year
Dr. S.K. Mohammed Jany	IT	M/S Mittapalli Spinners Limited, Narasaraopet	Non Government	1.00	September, 2024	1 Year
Dr B Venkata Siva	ME	M/S Mittapalli Spinners Limited, NRT	Non Government	5.00	Jul-24	2 Years
Dr M Venkanna Babu	ME	Falcon IT Training & Educational Services LLP	Non Government	2.50	Jan-25	2 Years
P Sravan	ME	Falcon IT Training & Educational Services LLP	Non Government	2.50	Jan-25	2 Years




Principal

Principal

NARASARAOPETA ENGINEERING COLLEGE  
(AUTONOMOUS)

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



# MITTAPALLI Spinners Limited

Date: 2nd February 2023

## WORK ORDER

To,

Dr. V VENKATA RAO,  
Prof & HoD,  
Dept. of Electronics and Communication Engineering,  
Narasaraopeta Engineering College (A),  
Andhra Pradesh, India  
Email: ecehod@nrtec.in

Dr. A V NAGESWARARAO,  
Associate Professor,  
Dept. of Electronics and Communication Engineering,  
Narasaraopeta Engineering College (A),  
Andhra Pradesh, India  
Email: avnr424@nrtec.in

Dear Dr. V VENKATA RAO & Dr. A V NAGESWARARAO,

Sub: Issuance of work order for Research Project on the title "Indoor Air Quality Monitoring for Spinning Mill Industry with Voice based Alerts using IoT" - Reg.

Ref: Your Application dated 20-01-2023

We are glad to inform you that we are satisfied with the proposal submitted by you regarding the prototype and testing of a "Indoor Air Quality Monitoring for Spinning Mill Industry with Voice based Alerts using IoT". We would like to issue this work order in order to start the project work. Sanction of Research Project Grant is hereby accorded to the above-mentioned project at a total cost Rs. 4,60,000/- (Four Lakhs Sixty Thousand rupees) for the duration of 2 years. Please note that all the payments shall be deposited to a single bank account authorized by Institution.

We wish you the best for the successful completion of the project.

Yours Sincerely,

General Manager

M/s Mittapalli Spinners Pvt. Ltd

**IQAC**



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

Admn.: # 18-2-65, Kota Bazaar, NARASARAOPET - 522 601, Guntur District, A.P. ☎ 08647 - 222450, Tele Fax : 08647 - 239902.

Factory : CHINATURAKAPALEM (V), Narasaraopet Mandal, Guntur District, A.P., Mobile : 95814 42701

GST NO. : 37AAGCM3942C1ZM, CIN : U17120AP2019PLC067024, PAN : AAGCM 3942C,

email : gm@mittapallispinners.com



# MITTAPALLI Spinners Limited

## Scope of Work and Milestones

Good quality of air is required to maintain good health conditions among the living environment. Hazardous gases and air pollution can be detected in surrounding areas. Air quality monitoring in the textile industry is crucial for ensuring a safe and healthy working environment for employees. The textile manufacturing process can involve various chemicals and pollutants that may affect indoor air quality. Air Quality Index (AQI) is the parameter that should be monitored which gives an efficient way of detection of air quality. Various sensors are interfaced to IoT platform to collect and pass the information regarding the pollutants to the personnel. Self-care is improved by the way of detecting the pollutants of the environment. By carefully selecting and deploying IoT sensors, and integrating them into a comprehensive monitoring system, the textile industry can actively manage and improve indoor air quality, contributing to a healthier and safer working environment.

The scope and milestones of the consulting project are as follows:

- **Sensor Deployment:**

**IoT Sensors:** Deploy IoT sensors throughout the textile facility to monitor various air quality parameters such as particulate matter (PM), volatile organic compounds (VOCs), temperature, humidity, and carbon dioxide levels.

**Connectivity:** Ensure that these sensors are connected to a central IoT platform through wireless networks for real-time data transmission.

- **Data Collection and Storage:**

**Cloud-based Storage:** Store the collected data on a cloud platform for easy access, scalability, and real-time analytics.

- **Data Analytics and AI:**

**Data Processing:** Use AI algorithms to process the data collected from sensors.

**Pattern Recognition:** Implement machine learning algorithms to recognize patterns and anomalies in the air quality data.

**Predictive Analytics:** Employ predictive models to forecast potential air quality issues or deviations based on historical data.

- **Alerts and Notifications:**

**Real-time Alerts:** Send real-time alerts and notifications to relevant personnel when air quality parameters deviate from acceptable levels.

**Mobile Apps:** Develop mobile applications for workers and supervisors to receive alerts and monitor air quality remotely.

- **Dashboard and Reporting:**

**Visualization:** Create a user-friendly dashboard that displays real-time and historical air quality data.

**Custom Reports:** Generate custom reports for compliance purposes or to identify trends over time.



*WVW*  
Principal

NARASARAO PETA ENGINEERING COLLEGE  
(AUTONOMOUS)  
NARASARAO PETA - 522 601, Palnadu (Dist.), A.P.





# MITTAPALLI Spinners Limited

- Maintenance and Calibration:  
Regular Maintenance: Establish a routine maintenance schedule for lot sensors to ensure accurate and reliable data.  
Calibration:  
Implement a calibration protocol to maintain the accuracy of sensor measurements.
- Employee Awareness and Training:  
Training Programs: Conduct training programs to educate employees about the importance of indoor air quality and how to respond to alerts.  
Feedback Mechanism: Establish a feedback mechanism to encourage employees to report air quality concerns.
- Description of this project:  
This project aims to enhance workplace safety, regulatory compliance, and operational efficiency within textile manufacturing facilities. Leveraging Internet of Things (IoT) technology, the project involves the deployment of a network of sensors strategically placed to monitor key air quality parameters, including Particulate Matter (PM), Volatile Organic Compounds (VOCs), temperature, humidity, and Carbon dioxide (CO<sub>2</sub>) levels.

The IoT sensors communicate wirelessly with a centralized platform, either cloud-based or edge computing, facilitating real-time data aggregation, storage, and analysis. A user-friendly dashboard provides stakeholders with immediate insights into air quality conditions, while an alert system promptly notifies relevant personnel of any deviations from acceptable levels.

To optimize the textile facility's environmental conditions, the system needs integration with Heating, Ventilation, and Air Conditioning (HVAC) systems. This integration enables dynamic control of ventilation rates based on continuously monitored air quality data, leading to improved energy efficiency and operational performance.

Machine learning algorithms can be employed for data analytics, enabling the system to identify patterns, predict potential air quality issues, and detect anomalies. Regular reports generated by the system contribute to internal analysis, regulatory compliance, and proactive decision-making.

## Financial Terms

The following financial terms have been accepted by both the parties:

A Research Project Grant of INR 2,30,000/- paid for First Instalment. Remaining balance Grant of INR 2,30,000/- will be released after submitting the final report.



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



Admn.: # 18-2-65, Kota Bazaar, NARASARAOPET - 522 601, Guntur District, A.P. ☎ 08647 - 222450, Tele Fax : 08647 - 239902.

Factory : CHINATURAKAPALEM (V), Narasaraopet Mandal, Guntur District, A.P., Mobile : 95814 42701

GST NO. : 37AAGCM3942C1ZM, CIN : U17120AP2019PLC067024, PAN : AAGCM 3942C,

email : gm@mittapallispinners.com



# MITTAPALLI Spinners Limited

Date: 8/2/2023

To,

Dr. V. Venkatarao  
Professor & HoD,  
Dept. of Electronics and Communication  
Engineering,  
Narasaraopeta Engineering College,  
Andhra Pradesh, India

Dr. A.V. Nageswara Rao  
Associate Professor,  
Dept. of Electronics and Communication  
Engineering,  
Narasaraopeta Engineering College,  
Andhra Pradesh, India

## Sub: Research Project work - Request-Reg.

Dear Dr. V. Venkatarao and Dr. A.V. Nageswara Rao,

We need an assistance for Indoor Air Quality Monitoring for the Spinning Mill Industry with Voice based Alerts using IoT in our Industry. So, we request you to do the following works as Research Project. The Research Project works are as follows:

Title of the Project	Work Place
Indoor Air Quality Monitoring for Spinning Mill Industry with Voice based Alerts using IoT	M/S Mittapalli Spinners Limited, NRT

Thanking you.

Yours Sincerely,

**IQAC**

General Manager  
M/s Mittapalli Spinners Pvt. Ltd



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

Admn.: # 18-2-65, Kota Bazaar, NARASARAOPET - 522 601, Guntur District, A.P. ☎ 08647 - 222450, Tele Fax : 08647 - 239902.

Factory : CHINATURAKAPALEM (V), Narasaraopet Mandal, Guntur District, A.P., Mobile : 95814 42701

GST NO. : 37AAGCM3942C1ZM, CIN : U17120AP2019PLC067024, PAN : AAGCM 3942C,

email : gm@mittapallispinners.com



# NARASARAOPETA ENGINEERING COLLEGE

(AUTONOMOUS)

Kotappakonda Road, Yellamanda (P.O), NARASARAOPET - 522 601, Palnadu Dist., A.P.

(Sponsored by Gayatri Educational Development Society), Narasaraopet.

Approved by AICTE, New Delhi & Permanently Affiliated to JNTUK, Kakinada. Code : 47

Accredited by NBA (CSE, ECE & ME) & NAAC "A+" Grade, ISO 9001 : 2015 Certified Institution.

08647-239904

Visit us at : [www.nrtec.in](http://www.nrtec.in)

e-mail : [principal@nrtec.in](mailto:principal@nrtec.in)



Date: 10/02/2023

To  
The General Manager,  
Mittapalli Spinners Ltd.  
Kotappakonda Road,  
Narasaraopet, Guntur District,  
A.P – 522601.

**Sub: Assigning Faculty Members for Research Project Work and Charges – Reg.**

**Ref: Research Project Work Order Letter No. Dated: 02/02/2023.**


Sir,

As per our discussion, I am assigning the faculty members from the department of Electronics & Communication Engineering for the research project work as per the work order. The charges may be applied after the work has been finished.

Title of the Project	Place of Work	Grant in Rs.	Name of the coordinator
Indoor Air Quality Monitoring for Spinning Mill Industry with Voice Based Alerts using IoT	M/S Mittapalli Spinners Limited, NRT	4,60,000	Dr. V.Venkatarao, Professor & HoD Dr. A.V. Nageswararao

Thanking You,

Yours Faithfully,

  
Principal





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



**NARASARAOPETA  
ENGINEERING COLLEGE**  
(AUTONOMOUS)

**Department of Electronics & Communication Engineering**

Date: 7.2.2025

To  
The General Manager,  
Mittapalli Spinners Limited,  
Narasaraopet.

**Sub: Research Project work – Completion of work – Research Report for Indoor Air Quality Monitoring for Spinning Mill Industry with Voice based Alerts using IoT - Reg.**

Respected Sir,

This report marks the successful completion of the Research Project work on 7.2.2025 for Indoor Air Quality Monitoring for the Spinning Mill Industry with Voice based Alerts using IoT. The goal was to provide high-quality, hands-on learning experiences through the development of practical and educational experiments for use in educational and industrial settings.

The trainers were tested rigorously for functionality, accuracy, and educational effectiveness. Each experiment was validated through real-world measurements and simulations. Feedback was gathered from initial users to ensure that the experiments met the expected educational outcomes. The development team at M/S Mittapalli Spinners Limited was also provided with extensive training in these experiments.

The Research Project for the Indoor Air Quality Monitoring for the Spinning Mill Industry with Voice based Alerts using IoT has been successfully completed. These trainers will be valuable assets for educational institutions, and additionally, the Research Project team.

The work is completed, and we appreciate the opportunity to collaborate on this project and look forward to future engagements.

Thanking You Sir,

Yours Faithfully,

Dr. V. Venkatarao  
Professor & HoD  
**HEAD OF THE DEPARTMENT**  
**DEPT. OF ELECTRONICS AND COMMUNICATION**  
**ENGG.**

**NARASARAOPETA ENGINEERING COLLEGE**  
**NARASARAOPETA-522 601**



Principal  
**NARASARAOPETA ENGINEERING COLLEGE**  
(AUTONOMOUS)  
NARASARAOPETA - 522 601, Palnadu (Dist.), A.P.



**NARASARAOPETA  
ENGINEERING COLLEGE**  
(AUTONOMOUS)

**Department of Electronics & Communication Engineering**

Date: 7.2.2025

To  
The General Manager,  
Mittapalli Spinners Limited,  
Narasaraopet.

**Sub: Research Project work – Completion of work – Research Report for Indoor Air Quality Monitoring for Spinning Mill Industry with Voice based Alerts using IoT - Reg.**

Respected Sir,

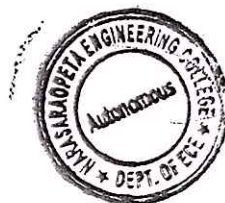
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The trainers were tested rigorously for functionality, accuracy, and educational effectiveness. Each experiment was validated through real-world measurements and simulations. Feedback was gathered from initial users to ensure that the experiments met the expected educational outcomes. The development team at M/S Mittapalli Spinners Limited was also provided with extensive training in these experiments.

The Research Project for the Indoor Air Quality Monitoring for the Spinning Mill Industry with Voice based Alerts using IoT has been successfully completed. These trainers will be valuable assets for educational institutions, and additionally, the Research Project team.

The work is completed, and we appreciate the opportunity to collaborate on this project and look forward to future engagements.

Thanking You Sir,

Yours Faithfully,

  
Dr. A.C.V. Nageswara Rao

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



# MITTAPALLI Spinners Limited

Date: 7/2/2025

To,

Dr. V. Venkatarao

Professor & HoD,

Dept. of Electronics and Communication Engineering,

Narasaraopeta Engineering College (A),

Andhra Pradesh, India

Dr. A.V. Nageswara Rao

Associate Professor,

Dept. of Electronics and Communication Engineering,

Narasaraopeta Engineering College (A),

Andhra Pradesh, India

**Sub: Acknowledgement for Research Project Work on Indoor Air Quality  
Monitoring for Spinning Mill Industry with Voice based Alerts using IoT –  
Reg.**

Dear Dr. V. Venkatarao and Dr. A.V. Nageswara Rao,

I am writing to formally acknowledge and appreciate your successful completion of the Research Project work on Indoor Air Quality Monitoring for the Spinning Mill Industry with Voice based Alerts using IoT. The team trained by you has been able to implement the project effectively, and we are grateful for your expertise.

We look forward to your continued support and collaboration in the future.


Thanking you,

Yours Sincerely,  
  


M/s Mittapalli Spinners Ltd.

Admn.: # 18-2-65, Kota Bazaar, NARASARAOPET - 522 601, Guntur District, A.P. ☎ 08647 - 222450, Tele Fax : 08647 - 239902.

Factory : CHINATURAKAPALEM (V), Narasaraopet Mandal, Guntur District, A.P., Mobile : 95814 42701

GST NO. : 37AAGCM3942C1ZM, CIN : U17120AP2019PLC067024, PAN : AAGCM 3942C,

email : gm@mittapallispinners.com

Date: 3<sup>rd</sup> December 2022

## WORK ORDER

To,

Dr. A.V. Nageswara Rao, (PI)  
Professor,  
Dept. of Electronics and Communication  
Engineering,  
Narasaraopeta Engineering College (A),  
Andhra Pradesh, India

Dr. S V N Sreenivasu, (Co-PI)  
Professor,  
Dept. of Computer Science and  
Engineering,  
Narasaraopeta Engineering College (A),  
Andhra Pradesh, India

Dear Dr. A.V. Nageswara Rao and Dr. S V N Sreenivasu,

**Sub: Issuance of work order for Interdisciplinary Research Project on the title "Design and Fabrication of Artificial Intelligence System for Tree Growth Rate Tracking using IoT" - Reg.**

Ref: Your Application dated 5-08-2022

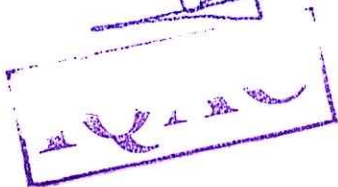
We are glad to inform you that we are satisfied with the proposal submitted by you regarding the trained model and testing of a "Design and Fabrication of Artificial Intelligence System for Tree Growth Rate Tracking using IoT". We would like to issue this work order in order to start the project work. Sanction of Interdisciplinary Research Project Grant is hereby accorded to the above-mentioned project at a total cost Rs. 4,00,000/- (Four Lakhsrupees) for the duration of 2 years. Please note that all the payments shall be deposited to a single bank account authorized by Institution.

We wish you the best for the successful completion of the project.

Yours Sincerely,



General Manager  
(Krinydi Technologies)



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

## Scope of Work and Milestones

Automate system for Growth Rate tracking of each tree in the forest industry which will help to solve the problem to predict the cycle time of each tree will be grown after previous batch of tree has been cut down for forest industry. System designed to keep track of Tree body when it expand to larger and Flex sensor used to wrap around detected the changing while the tree body is getting larger and the percent of the expand of tree body will convert to be growth rate then send them to database server wirelessly both short distance between tree to outpost station The growth rate data will Analyse the Machine learning Algorithms to create the profile of growth rate which will use to forecasting of wood production consist of the timeline of each batch in the next plantation of new trees.

The scope and milestones of the project are as follows:

- Design of the Flexi Tag with Sensors
- Fabrication of Flexi Tag and communicate to Micro station
- Dataset collection from the sensors and stored into the database
- Analysing the colleted Tree or Stem data
- Implement Mobile App or web Site for user front.
- To improve the accuracy of the trained model using ensemble classifier by fusing the extracted transfer learning-based deep features.

Description of this project:

Designing and fabricating automation systems that keep track the growth rate by using Flex sensors of IoT. Sensor wrap around the trunk of the tree then measuring the growth rate since from seedling till the trunk is getting larger and that the characteristic of Flex Sensor which wrap around the trunk change angle which translate to result of resistance to the form of bent by the change in the rate of bending to voltage divider schematic which will feed in to Analog to Digital will be entered to Microcontroller for processing and sending the converted value of the growth rate of the period and the value of each

#1-5-1116/A, Plot no. 10. Road No. 11. Opp. Lane of Rajadhani Function Hall, New Maruthi Nagar, Kothapet  
Hyderabad-500035 Email: [sales@knyditechnologies.com](mailto:sales@knyditechnologies.com) [www.krinyditechnologies.com](http://www.krinyditechnologies.com)



*Principal*  
Principal

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

# KRINYDI TECHNOLOGIES

*Exploring Electronics...*

local station to receive data using X-Bee, and will then communicate with the database server. By using data transmission to remote offices or stations connected to the network by sending data through the use of Radio Frequency in VHF 144.390 MHz by this Packet radio or APRS protocol(1-3) could have transmission distance of 1-2 kilometers away which this protocol is the most stable for long length data communication for the instant that also used for Satellite communication that is the reason why Packet Radio or APRS is the right choice for protocol to send data from rural area to gateway station that connected to main network system.

## Financial Terms

The following financial terms have been accepted by both the parties:

A Research Project Grant of INR 2,00,000/- paid for First Instalment. Remaining balance Grant of INR 2,00,000/- will be released after submitting the final report.



A green ink handwritten signature.

Principal

NARASARAOPETA ENGINEERING COLLEGE  
(AUTONOMOUS)

NARASARAOPET - 522601, Palnadu (Dist.), A.P.

# KRINYDI TECHNOLOGIES

*Exploring Electronics...*

Date: 9/12/2022

To,

Dr. A.V. Nageswara Rao, (PI)  
Professor,  
Dept. of Electronics and Communication  
Engineering,  
Narasaraopeta Engineering College (A),  
Andhra Pradesh, India

Dr. S V N Sreenivasu, (Co-PI)  
Professor,  
Dept. of Computer Science and  
Engineering,  
Narasaraopeta Engineering College (A),  
Andhra Pradesh, India

## **Sub: Interdisciplinary Research Project work – Request - Reg.**

Dear Dr. A.V. Nageswara Rao and Dr. S V N Sreenivasu,

We need an assistance for Design and Fabrication of Artificial Intelligence System for Tree Growth Rate Tracking using IoT in our Industry. So, we request you to do the following works as Research Project. The Research Project works are as follows:

Title of the Project	Work Place
Design and Fabrication of Artificial Intelligence System for Tree Growth Rate Tracking using IoT	Krinydi Technologies, Hyderabad

Thanking you,

Yours Sincerely,



General Manager  
Krinydi Technologies



*[Handwritten Signature]*  
Principal

NARASARAOPETA ENGINEERING COLLEGE  
(AUTONOMOUS)

#1-5-1116/A, Plot no. 10. Road No. 11. Opp. Lane of Rajadhani Function Hall, New Maruthi Nagar, Kothapet, Hyderabad-500035 Email: [sales@knyditechnologies.com](mailto:sales@knyditechnologies.com) www.krinyditechnologies.com  
Narasaraopeta, 522 001, Palnadu (Dist.), A.P.



**NARASARAOPETA  
ENGINEERING COLLEGE**  
(AUTONOMOUS)

**Department of Electronics & Communication Engineering**

Date: 7.12.2024

To,  
The General Manager,  
Krinydi Technologies,  
Hyderabad.

**Sub: Research Project work – Completion of work – Research Report for Design and Fabrication of Artificial Intelligence System for Tree Growth Rate Tracking using IoT" - Reg.**

Respected Sir,

This report marks the successful completion of the Research Project work on 7.12.2024 for Design and Fabrication of Artificial Intelligence System for Tree Growth Rate Tracking using IoT. The goal was to provide high-quality, hands-on learning experiences through the development of practical and educational experiments for use in educational and industrial settings.

The trainers were tested rigorously for functionality, accuracy, and educational effectiveness. Each experiment was validated through real-world measurements and simulations. Feedback was gathered from initial users to ensure that the experiments met the expected educational outcomes. The development team at Krinydi Technologies was also provided with extensive training in these experiments.

The Research Project for the Design and Fabrication of Artificial Intelligence System for Tree Growth Rate Tracking using IoT has been successfully completed. These trainers will be valuable assets for educational institutions, and additionally, the Research Project team.

The work is completed, and we appreciate the opportunity to collaborate on this project and look forward to future engagements.

Thanking You Sir,

Yours Faithfully,

  
Dr. A. V. Nageswara Rao, (PI)



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



**NARASARAOPETA  
ENGINEERING COLLEGE**  
(AUTONOMOUS)

**Department of Computer Science and Engineering**

Date: 7.12.2024

To,  
The General Manager,  
Krinydi Technologies,  
Hyderabad.

**Sub: Research Project work – Completion of work – Research Report for  
Design and Fabrication of Artificial Intelligence System for Tree Growth  
Rate Tracking using IoT" - Reg.**

Respected Sir,

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The work is completed, and we appreciate the opportunity to collaborate on this project and look forward to future engagements.

Thanking You Sir,



Yours Faithfully,

  
Dr. S V N Sreenivasu, (Co-PI)

  
Principal

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

# KRINYDI TECHNOLOGIES

*Exploring Electronics...*

Date: 7/12/2024

To,

Dr. A.V. Nageswara Rao, (PI)  
Professor,  
Dept. of Electronics and Communication  
Engineering,  
Narasaraopeta Engineering College (A),  
Andhra Pradesh, India

Dr. S V N Sreenivasu, (Co-PI)  
Professor,  
Dept. of Computer Science and  
Engineering,  
Narasaraopeta Engineering College (A),  
Andhra Pradesh, India

**Sub: Acknowledgement for Interdisciplinary Research Project work on Design and Fabrication of Artificial Intelligence System for Tree Growth Rate Tracking using IoT - Reg.**

Dear Dr. A.V. Nageswara Rao and Dr. S V N Sreenivasu,

I am writing to formally acknowledge and appreciate your successful completion of the Research Project work on Design and Fabrication of Artificial Intelligence System for Tree Growth Rate Tracking using IoT. The team trained by you has been able to implement the project effectively, and we are grateful for your expertise.

We look forward to your continued support and collaboration in the future.

Thanking you,

Yours Sincerely,


General Manager  
Krinydi Technologies

  
Principal

NARASARAOPETA ENGINEERING COLLEGE



# NARASARAOPETA ENGINEERING COLLEGE

(AUTONOMOUS)

Kotappakonda Road, Yellamanda (P.O), NARASARAOPET - 522 601, Palnadu Dist., A.P.

(Sponsored by Gayatri Educational Development Society), Narasaraopet.

Approved by AICTE, New Delhi & Permanently Affiliated to JNTUK, Kakinada. Code : 47

Accredited by NBA (CSE, ECE & ME) & NAAC "A+" Grade, ISO 9001 : 2015 Certified Institution.

08647-239904

Visit us at : [www.nrtec.in](http://www.nrtec.in)

e-mail : [principal@nrtec.in](mailto:principal@nrtec.in)



Date: 23/12/2024

To,  
The General Manager,  
Krinydi Technologies,  
Hyderabad.

**Sub: Research Project Work Payment – Request – Reg.**

**Ref: Research Project Work Completion Certificate Letter Dated: 07/12/2024.**

Sir,

We are happy to inform that our assigned faculty have completed the research project work in time as per your requirements. In this connection I request you to release the research project charges of Rs. 4,00,000/- (Four Lakhs Rupees Only) at the earliest. The details of the research project work and charges are given below.

Title of the Project	Grant in Rs.	Name of the coordinator	Present Status
Design and Fabrication of Artificial Intelligence System for Tree Growth Rate Tracking using IoT	4,00,000	Dr. A.V. Nageswara Rao, (PI) Dr. S V N Sreenivasu, (Co-PI)	Completed

Thanking You,


Yours Faithfully,

  
Principal

Principal

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

# KRINYDI TECHNOLOGIES

*Exploring Electronics...*

Date: 27/12/2024

To  
The Principal,  
Narasaraopeta Engineering College,  
Narasaraopeta.

Sir,

**Sub: Payment details of the research project work charges – Reg.**

With reference to the above subject, we have made payment of Rs. 4,00,000/- (Four Lakhs Rupees Only) through Bank Transfer.

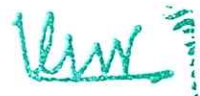
We expect to take your valuable services in future also.

Thanking You,

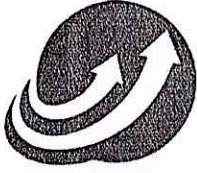
Yours Sincerely,



General Manager  
Krinydi Technologies



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



# SAK INFORMATICS

Student@knowledge

## WORK ORDER

06<sup>th</sup> September 2024

To,

Dr. S V N SREENIVASU,  
Professor,  
Department of Computer Science and Engineering,  
Narasaraopeta Engineering College (A), Narasaraopet,  
Guntur-522601, India.

Dear Dr. S V N SRINIVASU,

Sub: Issuance of work order for Research Project for **“ResNet-CNN Model for Plant Disease Classification for E-Agriculture Applications”**

This is with reference to your letter dated 10-08-2024 we are glad to inform you that we are satisfied with the proposal **“ResNet-CNN Model for Plant Disease Classification for E-Agriculture Applications”** submitted by you. We would like to issue this work order for you to start the Consultancy work. The duration of the project is for 10 months.

The scope of work and all the other terms and conditions are mentioned in the annexures below. Please note that all the payments shall be deposited to a single bank account authorized by you.

We wish you the best for the successful completion of the project.

Yours Sincerely,

MAHESH PALA  
For SAK INFORMATICS  
Managing Partner  
SAK INFORMATICS  
Managing Partner



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

## ANNEXURE – I

### SCOPE OF WORK & MILESTONES

The overall objective of the project work is to provide an enhanced detection and classification system for breast masses from mammographic images using the ResNet-CNN Model for Plant Disease Classification for E-Agriculture Applications. In addition, region of interest also utilized for improved detection of mass location with enhanced accuracy. The scope and milestones of the consulting project are as follows:

- Collecting the datasets in real-time.
- Pre-processing of mammograms.
- Feature extraction utilizing deep convolutional networks.
- Mass detection with confidence.
- Testing of proposed framework to predict and classify the type of mass.



  
Principal  
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**ANNEXURE – II**  
**FINANCIAL TERMS**

The following financial terms have been accepted by both the parties:  
A project grant fee of INR 92,000/- paid for entire work.

*CS*  
**IQAC**


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

## ANNEXURE – III ADMINISTRATIVE TERMS

The following administrative terms shall govern this contract:

- SAK INFORMATICS, shall hereby be referred with the term "SAK" and Narasaraopeta Engineering College shall hereby be referred as "NEC".
- There shall be fortnightly progress review calls between the NEC team and SAK team.
- The milestones should be achieved as mentioned in Annexure I.
- Any potential hindrances in terms of achieving the set milestones should be informed to SAK team well in advance.
- SAK shall be the sole owner of all the Intellectual Property during the course of the project.
- The continuation of the project shall be evaluated on a monthly basis depending upon the achievement of the set milestones and the overall progress of the project.
- SAK shall retain the right to cancel the consulting project at any point of time with one-month notice.
- All legal arbitration is subject to the jurisdiction of Hyderabad.

  
**IQAC**

  
Principal  
NARASARAOPETA ENGINEERING COLLEGE  
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# MITTAPALLI Spinners Limited

Date: 17/06/2024

## WORK ORDER

To,

Dr. B.Jhansi Vazram  
Professor & HoD,  
Department of Information Technology,  
Narasaraopeta Engineering College(A),  
Narasaraopet.

Dear Dr.B.Jhansi Vazram ,

Sub : Issuance of work order for research project on the title "Facial Expression Recognition For Security Of Spinning Mill" – Reg.,

Ref : Your Application dated on 14/06/2024

We are glad to inform you that we are satisfied with the proposal submitted by you regarding the prototype of a "Facial Expression Recognition For Security Of Spinning Mill". We would like to issue this work order to start the project work. Sanction of research project grant is hereby accorded to the above mentioned cost of Rs. 1,25,000/- (One Lakh Twenty Five Thousand Rupees only) for the duration of 1 year. Please note that all the payments shall be deposited to a single bank account authorized by Institution.

We wish you the best for the successful completion of the project.

Yours Sincerely,

General Manager

Principal

NARASARAOPETA ENGINEERING COLLEGE

(AUTONOMOUS)

Admn. # 18-2-65, Kola Bazaar, NARASARAOPET - 522 601, Guntur District, A.P. ☎ 08647 - 222450, Tele Fax 08647 - 222451  
Factory : CHINATURAKAPALEM (V), Narasaraopet Mandal, Guntur District, A.P. MA. D. C. 95814-42701  
GST NO. : 37AAGCM3942C12M, CIN : U17120AP2010PLC067024, PAN : AAGCM 3942C,  
email : gm@mittapallispinners.com





# MITTAPALLI Spinners Limited

## SCOPE OF WORK

### Facial Expression Recognition for Security of Spinning Mill

- **Data Acquisition**
  - Capture real-time video streams from CCTV cameras installed at entry/exit points, production areas, and restricted zones
  - Utilize standard facial expression datasets (e.g., FER2013, CK+) for initial training
- **Data Preprocessing**
  - Perform face detection using algorithms such as Haar Cascade or MTCNN
  - Apply image preprocessing techniques like resizing, normalization, and grayscale conversion
  - Use data augmentation (rotation, flipping, noise addition) to improve model robustness
- **Feature Extraction**
  - Extract facial landmarks (eyes, nose, mouth, eyebrows)
  - Identify key emotional features using deep learning-based feature extraction methods
- **Model Development**
  - Develop and train models using Convolutional Neural Networks (CNN)
  - Apply transfer learning techniques (e.g., VGG16, ResNet) for improved accuracy
  - Classify facial expressions such as happy, sad, angry, fear, surprise, and neutral
- **Real-Time System Integration**
  - Integrate the trained model with existing CCTV surveillance systems
  - Enable continuous monitoring of live video feeds
  - Generate real-time alerts for suspicious or abnormal expressions
- **Alert and Monitoring Mechanism**
  - Detect stress, fear, or anger indicating potential security threats
  - Trigger automated alerts (visual/audio notifications) to security personnel
- **Testing and Validation**
  - Evaluate system performance using accuracy, precision, recall, and F1-score
  - Conduct real-time testing in spinning mill environment
  - Optimize system for low latency and high reliability

**IQAC**

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# MITTAPALLI Spinners Limited

- **Deployment**
  - Deploy the system on local servers or cloud platforms
  - Integrate with existing infrastructure of the spinning mill
- **Maintenance and Support**
  - Provide user training and technical documentation
  - Perform periodic system updates and model retraining
  - Ensure continuous system monitoring and performance improvement
- **Expected Outcome**
  - Enhanced security surveillance system
  - Early detection of suspicious behavior
  - Improved worker safety and reduced manual monitoring effort

## PAYMENT TERMS

- **Advance Payment (20–30%)**
  - Paid at project initiation
  - Covers initial setup, data collection, and resource allocation
- **Milestone-Based Payments (40–50%)**
  - Paid in phases based on completion of:
    - Data preparation
    - Model development
    - System integration
- **Final Payment (20–30%)**
  - Paid after successful deployment and client acceptance
  - Includes documentation and training

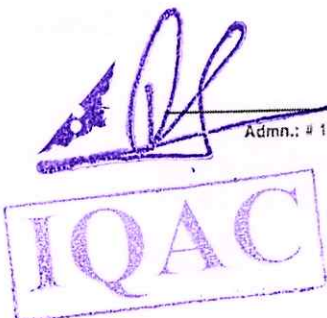
Principal  
NARASARAOPETA ENGINEERING COLLEGE  
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email : gm@mittapallispinners.com





**MITTAPALLI**  
**Spinners Limited**

Date: 17/06/2024

WORK ORDER

To,

Dr. M.Sireesha  
Associate Professor ,  
Department of Information Technology,  
Narasaraopeta Engineering College(A),  
Narasaraopet.

Dear Dr.M.Sireesha ,

Sub : Issuance of work order for research project on the title "Predictive Analysis For Cotton Yarn Using Machine Learning Algorithms" – Reg.,

Ref : Your Application dated on 14/06/2024

We are glad to inform you that we are satisfied with the proposal submitted by you regarding the prototype of a "Predictive Analysis For Cotton Yarn Using Machine Learning Algorithms" .We would like to issue this work order to start the project work. Sanction of research project grant is hereby accorded to the above mentioned cost of Rs. 1,54,000/- (One Lakh Fifty Four Thousand Rupees only) for the duration of 1 year. Please note that all the payments shall be deposited to a single bank account authorized by Institution.

We wish you the best for the successful completion of the project.

Yours Sincerely,

General Manager  
NARASARAOPETA ENGINEERING COLLEGE

(AUTONOMOUS)  
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Admn.: # 18-2-65, Kota Bazaar, NARASARAOPET - 522 601, Guntur District, A.P. ☎ 08647 - 222450, Tele Fax : 08647 - 239902

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email : gm@mittapallispinners.com





# MITTAPALLI Spinners Limited

## SCOPE OF WORK

### **Predictive Analysis for Cotton Yarn Using Machine Learning Algorithms**

The project focuses on developing an intelligent data-driven system to predict the quality and performance of cotton yarn in a spinning mill using advanced machine learning techniques. In textile manufacturing, yarn quality is influenced by multiple factors such as raw material properties, machine parameters, and environmental conditions. Traditional quality assessment methods are often manual, time-consuming, and reactive in nature. This project aims to overcome these limitations by introducing a predictive analytics approach that enables early detection of defects and proactive decision-making.

The system collects historical and real-time data from various stages of the spinning process, including parameters such as fiber properties, spindle speed, twist per inch, humidity, temperature, and machine settings. This data is preprocessed to handle missing values, remove noise, and normalize inputs for effective analysis. Feature engineering techniques are applied to identify the most significant variables that influence yarn quality.

#### • Requirement Analysis

- Understand spinning mill processes, yarn quality parameters (strength, count, twist, evenness), and production factors
- Identify key variables influencing yarn quality and production efficiency

#### • Data Collection

- Collect historical and real-time data from machines, sensors, and production logs
- Include parameters such as spindle speed, humidity, temperature, raw material quality, and machine settings

#### • Data Preprocessing

- Clean and handle missing or inconsistent data
- Perform normalization, feature scaling, and outlier removal
- Prepare structured datasets for model training

#### • Feature Engineering

- Identify critical features affecting yarn quality
- Apply statistical and correlation analysis to improve model performance

Principal

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email : gm@mittapallispinners.com





# MITTAPALLI Spinners Limited

- **Model Evaluation**

- Evaluate models using metrics such as accuracy, RMSE, MAE, and R<sup>2</sup> score
- Compare multiple models and select the best-performing one

- **System Development**

- Develop a predictive system for real-time or batch analysis
- Generate alerts for potential quality deviations or machine issues

- **Visualization & Reporting**

- Create dashboards for monitoring predictions and trends
- Provide graphical insights for decision-making

- **Deployment**

- Deploy the system on local servers or cloud platforms
- Integrate with existing mill infrastructure

- **Testing & Validation**

- Conduct real-time testing in the spinning mill environment
- Fine-tune models for improved performance

- **Maintenance & Updates**

- Provide periodic model retraining and system updates
- Offer technical support and documentation

## PAYMENT TERMS

- **Advance Payment (20–30%)**
  - Paid at project initiation
  - Covers initial setup, data collection, and resource allocation
- **Milestone-Based Payments (40–50%)**
  - Paid in phases based on completion of:
    - Data preparation
    - Model development
    - System integration
- **Final Payment (20–30%)**
  - Paid after successful deployment and client acceptance
  - Includes documentation and training

Principal

Admin.: # 18-2-65, Kotta Bazaar, NARASARAOPET - 522 601, Guntur District, A.P. ☎ 08647 - 222459

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email : gm@mittapallispinners.com

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





**MITTAPALLI**  
*Spinners Limited*

Date: 17/06/2024

WORK ORDER

To,

Dr. K.Somasekhar  
Associate Professor,  
Department of Information Technology,  
Narasaraopeta Engineering College(A),  
Narasaraopet.

Dear Dr.K.Somasekhar ,

Sub : Issuance of work order for research project on the title "Detection and Automatic Yarn Recognition" – Reg.,

Ref : Your Application dated on 14/06/2024

We are glad to inform you that we are satisfied with the proposal submitted by you regarding the prototype of a "Detection and Automatic Yarn Recognition". We would like to issue this work order to start the project work. Sanction of research project grant is hereby accorded to the above mentioned cost of Rs. 95,000/- (Ninty Five Thousand Rupees only) for the duration of 1 year. Please note that all the payments shall be deposited to a single bank account authorized by Institution.

We wish you the best for the successful completion of the project.

Yours Sincerely,

General Manager

Principal

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

Admn.: # 18-2-65, Kota Bazaar, NARASARAOPET - 522 601, Guntur District, A.P. ☎ 08647 - 222450, Telex No. 190557, Fax No. 08647 - 222451

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email : gm@mittapallispinners.com





SCOPE OF WORK

**Detection and Automatic Yarn Recognition**

This project aims to develop an intelligent system for the **detection and automatic recognition of yarn** in textile spinning mills using advanced image processing and machine learning techniques. In conventional textile industries, yarn inspection and classification are primarily carried out manually, which is time-consuming, error-prone, and inefficient for large-scale production. The proposed system addresses these challenges by automating the process, ensuring higher accuracy, consistency, and real-time monitoring.

The system captures yarn images or video streams using high-resolution cameras installed along the production line. These images are then processed using computer vision techniques to detect yarn presence, structure, and surface characteristics. Preprocessing steps such as noise removal, contrast enhancement, and image normalization are applied to improve the quality of input data and ensure reliable analysis under varying industrial conditions.

• **Requirement Analysis**

- Study spinning mill processes and existing yarn inspection methods
- Identify key yarn quality parameters such as thickness, texture, twist, and defects
- Define system requirements for automation and real-time monitoring

• **Image/Data Acquisition**

- Capture yarn images and video streams using high-resolution cameras installed along the production line
- Collect datasets under different lighting and operational conditions

• **Data Preprocessing**

- Perform noise removal, contrast enhancement, and image normalization
- Handle variations in illumination, background, and motion
- Prepare clean and consistent image datasets for analysis

• **Yarn Detection**

- Implement computer vision techniques to detect yarn presence in images/video frames
- Segment yarn from background using edge detection or thresholding methods

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

**IQAC**



# MITTAPALLI Spinners Limited

- **Model Development**
  - Develop machine learning/deep learning models (e.g., CNN) for yarn recognition and classification
  - Train models to identify yarn types and detect defects such as unevenness, slubs, and breakages
- **Model Evaluation**
  - Evaluate performance using accuracy, precision, recall, and F1-score
  - Optimize models for better detection accuracy and speed
- **Real-Time System Integration**
  - Integrate the trained model with live production line monitoring systems
  - Enable continuous inspection and automatic recognition of yarn
- **Visualization and Alert System**
  - Develop a dashboard to display detection results and classification outputs
  - Generate alerts for defective or abnormal yarn conditions
- **Testing and Validation**
  - Test the system under real industrial conditions
  - Validate performance for different yarn types and environmental variations
- **Deployment**
  - Deploy the system on local servers or edge devices in the spinning mill
  - Ensure compatibility with existing infrastructure
- **Maintenance and Support**
  - Provide documentation and user training
  - Perform periodic updates, model retraining, and system maintenance

## PAYMENT TERMS

- **Advance Payment (20–30%)**
  - Paid at project initiation
  - Covers initial setup, data collection, and resource allocation
- **Milestone-Based Payments (40–50%)**
  - Paid in phases based on completion of:
    - Data preparation
    - Model development
    - System integration
- **Final Payment (20–30%)**
  - Paid after successful deployment and client acceptance
  - Includes documentation and training

Admin # 18-2-65, Kota Bazaar, NARASARAOPET - 522 601, Guntur District, A.P. ☎ 08647 - 222450, Tele Fax : 08647 - 239902

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



**MITTAPALLI**  
*Spinners Limited*

Date: 17/06/2024

WORK ORDER

To,

Dr. R.Satees Kumar  
Professor ,  
Department of Information Technology,  
Narasaraopeta Engineering College(A),  
Narasaraopet.

Dear Dr.R.Satees Kumar ,

Sub : Issuance of work order for research project on the title “Digital Water Quality Prediction Using Machine Learning Techniques” – Reg.,

Ref : Your Application dated on 14/06/2024

We are glad to inform you that we are satisfied with the proposal submitted by you regarding the prototype of a “Digital Water Quality Prediction Using Machine Learning Techniques” .We would like to issue this work order to start the project work. Sanction of research project grant is hereby accorded to the above mentioned cost of Rs. 70,000/- (Seventy Thousand Rupees only) for the duration of 1 year. Please note that all the payments shall be deposited to a single bank account authorized by Institution.

We wish you the best for the successful completion of the project.

Yours Sincerely,

General Manager

Principal

Admn.: # 18-2-65, Kota Bazaar, NARASARAOPET - 522 601, Guntur District, A.P. ☎ 08647 - 222450, Tele Fax : 08647 - 209501

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



SCOPE OF WORK

**Digital Water Quality Prediction Using Machine Learning Techniques**

This project aims to develop an intelligent and automated system for predicting water quality using advanced machine learning techniques. Water quality monitoring is a critical aspect in environmental management, public health, and industrial applications. Traditional methods of water testing involve manual sampling and laboratory analysis, which are time-consuming, costly, and not suitable for real-time monitoring. The proposed system addresses these limitations by providing a data-driven, predictive approach for continuous water quality assessment.

The system collects historical and real-time data from various sources such as water sensors, IoT devices, and environmental monitoring systems. Key parameters considered include pH level, turbidity, temperature, dissolved oxygen (DO), electrical conductivity, total dissolved solids (TDS), and biological or chemical contaminants. This data is preprocessed to handle missing values, remove noise, and normalize the inputs to ensure reliable analysis.

• **Requirement Analysis**

- Identify water quality standards and regulatory parameters (drinking, irrigation, industrial use)
- Define system objectives for real-time monitoring and prediction

• **Data Acquisition**

- Collect historical and real-time data from water sensors, IoT devices, and monitoring systems
- Include parameters such as pH, turbidity, temperature, dissolved oxygen (DO), TDS, and conductivity

• **Data Preprocessing**

- Handle missing, noisy, or inconsistent data
- Perform normalization, scaling, and data cleaning
- Prepare structured datasets for model training

• **Feature Engineering**

- Analyze correlations between water quality parameters
- Select significant features influencing water quality
- Reduce dimensionality if required

Adm. : # 1B-2-65, Kota Bazaar, NARASARAOPET - 522 601, Guntur District, A.P. ☎ 08647 - 222450, Tele Fax : 08647 - 239902.

Factory : CHINATURAKAPALEM (V), Narasaraopet Mandal, Guntur District, A.P., Mobile : 95914 4270

GST NO. : 37AAGCM3942C1ZM, CIN : U17120AP2010PLC067024, PAN : AAAGCM3942C1ZM

email : gm@mittapallispinners.com



*Handwritten signature in green ink.*

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



# MITTAPALLI Spinners Limited

- **Model Evaluation**
  - Evaluate performance using metrics like accuracy, MAE, RMSE, and R<sup>2</sup> score
  - Compare multiple models and select the best-performing one
- **System Design & Development**
  - Build a predictive system for real-time or batch processing
  - Integrate data input pipelines from IoT/sensors
- **Visualization & Dashboard**
  - Develop a user interface to display:
    - Real-time water quality status
    - Historical trends and analytics
    - Prediction results
- **Alert and Notification System**
  - Generate alerts when water quality exceeds permissible limits
  - Notify authorities or users for immediate action
- **Testing and Validation**
  - Test system performance under real environmental conditions
  - Validate predictions against actual measurements
- **Deployment**
  - Deploy the system on cloud or local servers
  - Ensure scalability and reliability
- **Maintenance and Support**
  - Provide documentation and user training
  - Perform periodic updates and model retraining
  - Ensure continuous monitoring and improvement

## Expected Outcome:

A smart, automated water quality prediction system that enables real-time monitoring, early detection of contamination, and data-driven decision-making for environmental and public health safety.

## PAYMENT TERMS

- **Advance Payment (20–30%)**
  - Paid at project initiation
  - Covers initial setup, data collection, and resource allocation
- **Milestone-Based Payments (40–50%)**
  - Paid in phases based on completion of:
    - Data preparation
    - Model development
    - System integration
- **Final Payment (20–30%)**
  - Paid after successful deployment and client acceptance
  - Includes documentation and training

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**MITTAPALLI**  
*Spinners Limited*

Date: 17/06/2024

WORK ORDER

To,

Dr. Sk.Mohammed Jany,  
Associate Professor,  
Department of Information Technology,  
Narasaraopeta Engineering College(A),  
Narasaraopet.

Dear Dr.Sk,Mohammed Jany ,

Sub : Issuance of work order for research project on the title "Stress Level Detection in Spinning Mill Workouts" – Reg.,

Ref : Your Application dated on 14/06/2024

We are glad to inform you that we are satisfied with the proposal submitted by you regarding the prototype of a "Stress Level Detection in Spinning Mill Workouts" .We would like to issue this work order to start the project work. Sanction of research project grant is hereby accorded to the above mentioned cost of Rs. 1,00,000/- (One Lakh Rupees only) for the duration of 1 year. Please note that all the payments shall be deposited to a single bank account authorized by Institution.

We wish you the best for the successful completion of the project.

Yours Sincerely,

General Manager

Admin. # 102-65, Kala Bazaar, NARASARAOPET - 522 601, Guntur District, A.P. ☎ 08647 - 222450, Tele Fax : 08647-239902.

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GST NO. : 37AAGCM3942C1ZM, CIN : U17120AP2010PLC067024, PAN : AABG0104231

email : gm@mittapallispinners.com



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



# MITTAPALLI Spinners Limited

## SCOPE OF WORK

### Stress Level Detection in Spinning Mill Workouts

This project aims to develop an intelligent system for detecting and analyzing the stress levels of workers in spinning mills using advanced machine learning and sensor-based technologies. In textile industries, workers are often exposed to physically demanding tasks, repetitive operations, noise, and environmental factors such as heat and humidity, which can lead to stress, fatigue, and reduced productivity. Traditional methods of monitoring worker well-being are largely manual and subjective, making it difficult to identify stress levels in real time. This project addresses these challenges by providing an automated, objective, and continuous stress detection solution.

The system collects data from multiple sources, including wearable sensors (such as heart rate monitors and activity trackers), environmental sensors (temperature, humidity, noise levels), and optionally facial expression or posture analysis using cameras. Key physiological parameters such as heart rate variability, skin temperature, and movement patterns are analyzed to assess stress levels. In addition, workplace conditions that contribute to stress are also monitored.

#### • Requirement Analysis

- Study working conditions in spinning mills (noise, heat, workload, shifts)
- Identify key stress indicators (physiological, behavioral, environmental)
- Define system objectives for real-time stress monitoring

#### • Data Acquisition

- Collect data from:
  - Wearable sensors (heart rate, activity levels)
  - Environmental sensors (temperature, humidity, noise)
  - Optional camera inputs for facial expression/posture analysis

#### • Data Preprocessing

- Handle missing and noisy sensor data
- Normalize and standardize inputs
- Synchronize multi-source data (sensor + visual inputs)

#### • Feature Extraction

- Extract physiological features (heart rate variability, movement patterns)
- Analyze environmental factors contributing to stress
- Identify behavioral patterns linked to fatigue and stress

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GST No. : 37AAGCM3942C1ZM. CIN : U17120AP2010PLC067024. PAN : AAQCM3942C

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- **Model Evaluation**
  - Evaluate models using accuracy, precision, recall, and F1-score
  - Optimize models for reliable stress detection
- **Real-Time Monitoring System**
  - Integrate models with live sensor data streams
  - Enable continuous stress level tracking of workers
- **Alert and Notification System**
  - Generate alerts for high stress or fatigue conditions
  - Notify supervisors for timely intervention
- **Visualization & Dashboard**
  - Develop interface to display:
    - Individual and group stress levels
    - Historical trends and analytics
  - Provide actionable insights for management
- **Testing and Validation**
  - Test system in real spinning mill environment
  - Validate accuracy under different working conditions
- **Deployment**
  - Deploy system on local server or cloud platform
  - Ensure compatibility with existing infrastructure
- **Maintenance and Support**
  - Provide training and documentation
  - Perform periodic updates and model retraining
  - Ensure continuous system monitoring

### Expected Outcome:

An intelligent stress monitoring system that improves worker safety, reduces fatigue-related risks, enhances productivity, and supports better workforce management in spinning mills.

### PAYMENT TERMS

- **Advance Payment (20–30%)**
  - Paid at project initiation
  - Covers initial setup, data collection, and resource allocation
- **Milestone-Based Payments (40–50%)**
  - Paid in phases based on completion of:
    - Data preparation
    - Model development
    - System integration
- **Final Payment (20–30%)**
  - Paid after successful deployment and client acceptance
  - Includes documentation and training

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



**MITTAPALLI**  
*Spinners Limited*

Date: 29-07-2024

**WORK ORDER**

To,

Dr. M.Venkanna Babu  
Associate Professor  
Dept. of Mechanical Engineering  
Narasaraopeta Engineering College  
Andhra Pradesh, India  
Email: [venkannababu.mendi@gmail.com](mailto:venkannababu.mendi@gmail.com)

Dear Dr. M.Venkanna Babu,

**Subject:** Issuance of Work Order for Research Project titled "Design and Fabrication of a Low-Cost Electric Vehicle" – Reg.

**Ref:** Your request dated 18-05-2024

We are glad to inform you that we are satisfied with the proposal submitted by you regarding the design, analysis, and fabrication of the project titled "**Design and Fabrication of a Low-Cost Electric Vehicle**". We are pleased to issue this work order to initiate the project work. Sanction of Research Project Grant is hereby accorded for the above-mentioned project at a total cost of ₹5,00,000/- (Rupees Five Lakhs only) for a duration of two (2) years. The project aims to develop an economical, energy-efficient, and sustainable electric vehicle prototype using modern engineering techniques and cost-effective materials. You are requested to ensure that all project-related funds are utilized strictly for the intended purpose. The payment shall be released and deposited into a single bank account authorized by the Institution.

We wish you all the best for the successful completion of the project.

Thanking You

Yours faithfully

**IQAC**

Address: 13-65, Peta Bezaar, NARASARAOPETA - 522 601, Guntur District, A.P. ☎ 08647 - 222450, Tele Fax : 08647 - 222902  
Factory : CHINATURAKAPALEM (V), Narasaraopeta Mandal, Guntur District, A.P., Mobile : 95814 42705  
GST NO. : 37AAGCM3942C1ZM, CIN : U17120AP2010PLC067024, PAN : AAGCM 3942C,  
email : [gm@mittapallispinners.com](mailto:gm@mittapallispinners.com)

**Principal**  
**NARASARAOPETA ENGINEERING COLLEGE**  
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### Scope of Work and Milestones

In the current era, electric vehicles (EVs) play a vital role in providing sustainable and eco-friendly transportation. This project focuses on the “Design and Fabrication of a Low-Cost Electric Vehicle” to develop an economical, efficient, and reliable mobility solution.

The scope of the project includes design, analysis, fabrication, and testing of an electric vehicle prototype using cost-effective materials and components. The work involves chassis design, selection of motor and battery, system integration, and performance evaluation.

#### **Description of the Project:**

The motivation to develop a low-cost electric vehicle arises from the need to provide affordable and sustainable transportation solutions. The project focuses on designing a lightweight and efficient vehicle structure that can be easily manufactured and deployed in real-world conditions. The proposed approach involves systematic design, analysis, fabrication, and testing of the vehicle using standard engineering practices.

The project is divided into multiple phases. In the initial phase, design and simulation of the vehicle components are carried out using CAD and analysis tools. In the second phase, fabrication and assembly of the prototype are performed using locally available materials and components. In the final phase, testing and performance evaluation are conducted to validate the design and ensure compliance with safety and efficiency standards.

#### **Milestones:**

- Phase 1 (Months 1–3): Literature review and feasibility study
- Phase 2 (Months 4–6): Conceptual design and system planning
- Phase 3 (Months 7–10): Detailed design and simulation
- Phase 4 (Months 11–14): Procurement of components
- Phase 5 (Months 15–18): Fabrication and assembly
- Phase 6 (Months 19–21): Testing and validation
- Phase 7 (Months 22–24): Optimization and final documentation

**IQAC**

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**Financial Terms**

The following financial terms have been accepted by both parties:

A Research Project Grant of INR 5, 00,000/- is sanctioned for the project "Design and Fabrication of a Low-Cost Electric Vehicle." The initial installment will be released at the start of the project, and the remaining balance will be released upon submission of the final report.

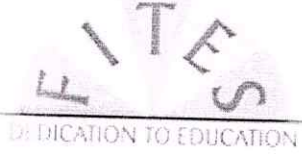
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**IQAC**

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



FALCON IT Training &  
Educational Services LLP

Date: 28-01-2025

**WORK ORDER**

To,  
Dr. B.Venkata Siva  
Professor  
Dept. of Mechanical Engineering  
Narasaraopeta Engineering College  
Andhra Pradesh, India  
Email: mechhod@nrtec.in

Dear Dr. B.Venkata Siva,

**Subject:** Issuance of Work Order for Research Project titled "Design and Development of Robots for different real time Applications" – Reg.

**Ref:** Your request dated 02-01-2025

We are pleased to inform you that your proposal for the research project titled "Design and Development of Robots for Different Real-Time Applications" has been reviewed and approved. Accordingly, this work order is issued to initiate the project. The research aims to design and develop robotic systems suitable for various real-time applications such as industrial automation, surveillance, and service operations, ensuring efficiency, accuracy, and adaptability. Sanction of Research Project Grant is hereby accorded for the above-mentioned project at a total cost of ₹2, 50,000/- (Rupees Two Lakhs Fifty Thousand only) for a duration of two (2) years. You are requested to ensure that all project-related funds are utilized strictly for the intended purpose. The payment shall be released and deposited into a single bank account authorized by the Institution.

We wish you all the best for the successful completion of the project.

Thanking you,

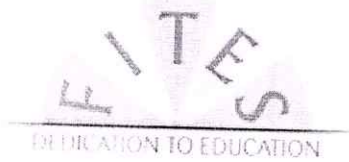
V.R. Kanetkar

Yours faithfully,

**IQAC**

Principal

**NARASARAOPETA ENGINEERING COLLEGE  
(AUTONOMOUS)  
NARASARAOPETA - 522 601, Palnadu (Dist.), A.P.**



## Scope of Work and Milestones

In the modern technological era, robotics plays a crucial role in addressing real-time challenges across industries such as manufacturing, healthcare, agriculture, and automation. This project, titled “Design and Development of Robots for Different Real-Time Applications,” aims to develop efficient, reliable, and application-specific robotic systems.

The scope of the project includes the design, analysis, development, and testing of robotic prototypes tailored for various real-time applications. The work involves mechanical design, sensor integration, control system development, programming, and performance evaluation to ensure accuracy and efficiency.

### Description of the Project

The motivation behind this project is to leverage robotics technology to solve practical, real-world problems by developing **intelligent and adaptable robotic systems**. The project focuses on creating robots capable of performing tasks such as material handling, surveillance, environmental monitoring, and automation.

The development process follows a structured engineering approach and is divided into multiple phases:

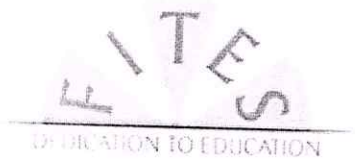
- **Initial Phase:** Requirement analysis and conceptual design of robotic systems
- **Intermediate Phase:** Mechanical fabrication, electronics integration, and programming
- **Final Phase:** Testing, validation, and optimization for real-time applications

### Milestones

- **Phase 1 (Months 1–3):** Literature review and problem identification
- **Phase 2 (Months 4–6):** Conceptual design and system architecture
- **Phase 3 (Months 7–10):** Detailed design and simulation
- **Phase 4 (Months 11–14):** Procurement of components
- **Phase 5 (Months 15–18):** Fabrication and development
- **Phase 6 (Months 19–21):** Testing and validation
- **Phase 7 (Months 22–24):** Optimization and final documentation



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### Financial Terms

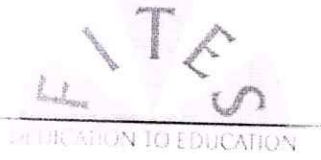
The following financial terms have been mutually agreed upon by both parties:

A Research Project Grant of INR 2, 50,000/- (Rupee Two Lakh Fifty Thousand only) is sanctioned for the project titled "Design and Development of Robots for Different Real-Time Applications." The initial instalment will be released at the commencement of the project, and the remaining balance will be disbursed upon successful submission and acceptance of the final project report.

V.R. Kaneth

  
**IQAC**

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



FALCON IT Training &  
Educational Services LLP

Date: 28-01-2025

**WORK ORDER**

To,  
Mrs. P. Sravani  
Assistant Professor  
Dept. of Mechanical Engineering  
Narasaraopeta Engineering College  
Andhra Pradesh, India  
Email: sravanisravz304@gmail.com

Dear Mrs. P. Sravani,

**Subject:** Issuance of Work Order for Research Project titled "Design, Structural Analysis & Fabrication of Drone" – Reg.

**Ref:** Your request dated 02-01-2025

We are pleased to inform you that your proposal for the research project titled "*Design, Structural Analysis & Fabrication of Drone*" has been reviewed and approved. Accordingly, this work order is hereby issued to initiate the project. The research aims to design and develop a drone system suitable for real-time applications such as surveillance, aerial monitoring, and data collection, ensuring stability, efficiency, and reliability. The project also focuses on structural analysis and lightweight design to enhance performance and durability. Sanction of Research Project Grant is hereby accorded for the above-mentioned project at a total cost of ₹2, 50,000/- (Rupees Two Lakhs Fifty Thousand only) for a duration of two (2) years. You are requested to ensure that all project-related funds are utilized strictly for the intended purpose. The payment shall be released in installments and deposited into a single bank account authorized by the Institution.

We wish you all the best for the successful completion of the project.

Thanking you,

  
Yours faithfully,

**IQAC**

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



### Scope of Work and Milestones

In the current technological landscape, drones play a vital role in applications such as surveillance, agriculture, disaster management, and delivery systems. This project aims to design and develop a cost-effective, lightweight, and efficient drone system for real-time applications. The scope of the project includes design, structural analysis, fabrication, and testing of a drone prototype. The work involves frame design, material selection, aerodynamic considerations, propulsion system integration, control system development, and performance evaluation.

### Description of the Project

The objective of this project is to develop a drone system capable of performing real-time tasks with stability, efficiency, and reliability. The project focuses on designing a **structurally sound and lightweight drone frame**, integrating essential electronic components such as motors, sensors, and controllers.

The project will be executed in multiple phases:

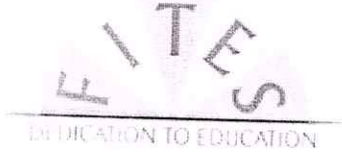
- **Initial Phase:** Conceptual design and structural analysis using CAD and simulation tools
- **Intermediate Phase:** Procurement of components, fabrication, and system integration
- **Final Phase:** Testing, validation, and optimization for real-time applications

### Milestones

- **Phase 1 (Months 1–3):** Literature review and feasibility study
- **Phase 2 (Months 4–6):** Conceptual design and system planning
- **Phase 3 (Months 7–10):** Detailed design and structural analysis
- **Phase 4 (Months 11–14):** Procurement of components
- **Phase 5 (Months 15–18):** Fabrication and assembly
- **Phase 6 (Months 19–21):** Testing and validation
- **Phase 7 (Months 22–24):** Optimization and final documentation



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### Financial Terms

The following financial terms have been mutually agreed upon by both parties:

A Research Project Grant of INR 2, 50,000/- (Rupee Two Lakh Fifty Thousand only) is sanctioned for the project titled "Design, Structural Analysis & Fabrication of Drone". The initial instalment will be released at the commencement of the project, and the remaining balance will be disbursed upon successful submission and acceptance of the final project report.

V. P. Kanth



V. P. Kanth

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