



NARASARAOPETA ENGINEERING COLLEGE

(AUTONOMOUS)

3.2.1 Grants received from Government and Non-government agencies for research projects , endowments in the institution during the year (INR in Lacks)

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 recognised as research guides

3.2.4 details of departments having research projects funded by Government and/or Non-government agencies during the year

2023-2024

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 & 3.2.4 Details of Departments having research projects funded by Government and/or Non-government agencies during the year

Name of the Project/ Endowments, Chairs	Name of the Principal Investigator/Co-investigator	Department of Principal Investigator	Year of Award	Amount Sanctioned	Duration of the project	Name of the Funding Agency	Type (Government/non- Government)
Design a model for Dyeing Defects by using Image Processing and Fuzzy Neural Network	Dr. S.V.N. Sreenivasu	CSE	6/15/2022	4,60,000/-	2 Years	Mittapalli Spinners Limited	Non Government
Design and Fabrication of Artificial Intelligence System for Tree Growth Rate Tracking Using IoT	Dr.A.V.Nageswara Rao/ Dr.S.V.N. Sreenivasu	ECE	12/4/2022	2,00,000/-	2 Years	Krinydi Technologies	Non Government
Indoor Air Quality Monitoring for Spinning Mill Industry with Voice based Alerts using IoT	Dr. V. Venkata Rao/ Dr.A.V.Nageswara Rao	ECE	2/2/2023	4,60,000/-	2 years	Mittapalli Spinners Limited	Non-Government
				TOTAL = 11,20,000/-			


IQAC


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NARASARAOPETA - 522 601
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MITTAPALLI
Spinners Limited

Date : 15th june 2022

WORK ORDER

To,

Dr. S V N SREENIVASU,
Professor,
Dept. of Computer Science and Engineering,
Narasaraopeta Engineering College (A),
Andhra Pradesh, India
E-Mail:- dr.svnsrinivasu@gmail.com

Dear Dr. S V N SREENIVASU,

Sub: Issuance of work order for Research Project on the title "Design a model for Dyeing Defects by using Image processing and Fuzzy Neural Network" — Reg.

Ref: Your Application dated 18-03-2022

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 a model for Dyeing Defects by using Image processing and Fuzzy Neural Network". 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. 9,20,000/- (Nine Lakhs Twenty 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.

Thanking you.

Yours faithfully,


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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 : U17120AP2010PLC067024, PAN : AAGCM 3942C.

email : gm@mittapallispinners.com



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Scope of Work and Milestones

In this digital era, images and videos are being used as influential sources of evidence in a variety of contexts like evidence during trials, insurance fraud, social networking, etc. The easy adaptability of editing tools for digital images, especially without any visual proof of manipulation, give rise to questions about their authenticity. It is the job of image forensics authorities to develop technological innovations that would detect the seven kinds of dyeing defects including filling band in the shade, dye and carrier spots, mist, oil stain, tailing, listing and uneven dyeing on the selvage. The scope and milestones of the consulting project are as follows:

Dataset collection i.e., Reference to dyeing images.

Preprocess the dataset for extracting the discriminative features for training the dye, carrier spots mist etc.

Implement transfer learning models to enhance the training by extracting the deep features.

To improve the accuracy of the trained model using ensemble classifier by fusing the extracted transfer learning-based deep features.

To develop evaluation metrics for accessible security.

Description of this project:

The motivation to use lightweight models in favour to prevent overfitting of the convolutional neural network (CNN) architectures and can be easily deployed on resource constrained hardware and can learn enriched representations. The lightweight models can be deployed effectively on resource-restricted hardware and can learn enriched representation. In this project, the decision fusion of lightweight deep learning- based models is proposed for the detecting the dyeing defects of cotton images. The proposed approach consists of two phases on the pretrained and fine-tuned lightweight deep learning models namely SqueezeNet, MobileNetV2, ShuffleNet or ResNet152. In the first phase, features from the images are extracted using lightweight deep learning models without regularization. In the second phase, fine-tuned lightweight deep learning models with fusion and regularization are used to detect dyeing defects.



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GST NO. : 37AAGCM3942C1ZM, CIN : U17120AP2010PLC067024, PAN : AAGCM 3942C,

email : gm@mittapallispinners.com



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Financial Terms

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

A Research Project Grant of INR 4,60,000/- paid for First Instalment. Remaining balance Grant of INR 4,60,000/- will be released after submitting the final report.

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

Date : 4th 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

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


Manager
Krinydi Technologies

1-5-1116/A, Plot No. 10, Road No. 11, Opp. Lane of Rajadhani Function Hall, New Maruthi Nagar, Kothapet
Hyderabad - 500035 Email: sales@krinyditechnologies.com www.krinyditechnologies.com




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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 collected 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@krinyditechnologies.com www.krinyditechnologies.com




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TECHNOLOGIES

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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.

1-5-1116/A, Plot No. 10, Road No. 11, Opp. Lane of Rajadhani Function Hall, New Maruthi Nagar, Kothapet
Hyderabad - 500035 Email: sales@krinyditechnologies.com www.krinyditechnologies.com




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Guntur (Dist.), A.P.

TECHNOLOGIES

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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.

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Hyderabad - 500035 Email: sales@krinyditechnologies.com www.krinyditechnologies.com




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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
E-Mail:- ecehod@nrtec.in

Dr. A V NAGESWARARAO,
Associate Professor,
Dept. of Electronics and Communication Engineering,
Narasaraopeta Engineering College (A),
Andhra Pradesh, India
E-Mail:- avn424@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

Admn.: # 18-2-85, 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, GIN : U17120AP2010PLC067024, PAN : AAGCM 3942C,

email : gm@mittapallispinners.com



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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.
- **Maintenance and Calibration:**
Regular Maintenance: Establish a routine maintenance schedule for IoT sensors to ensure accurate and reliable data.
Calibration: Implement a calibration protocol to maintain the accuracy of sensor measurements.

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- **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 (CO₂) 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:

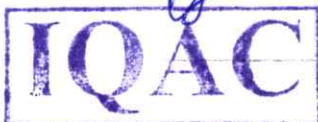
A Research Project Grant of INR 2,30,000/- paid for First Instalment. Remaining balance Grant of INR 2,30,000/- will be released after submitting the final report.

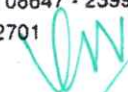
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email : gm@mittapallispinners.com




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3.2.3 Details of teachers recognised as research guides

S.NO	Name of full-time teachers with PhD / D.M. / M.Ch. / D.N.B Super Specialty /DSc / DLitt and Year of DLitt during the year	Qualification (PhD / D.M. / M.Ch. / D.N.B Super Specialty /DSc / DLitt) and Year of obtaining	Whether recognised as a research guide for PhD?	Year of recognition as a Research Guide	Is the teacher still serving the institution?/If not, when did he/she leave the institution?	Name of the scholar	Month and Year of registration of the scholar	PhD Scholar's Title of the Thesis
1	Dr. V.Venkata Rao	Ph.D. 2011	YES	2021	YES	B. Manjula	Nov-12	Methods for improving the position accuracy of Global Positioning system
2	Dr. A.V. Nageswara Rao	Ph.D. 2018	YES	2021	YES	John Joseph Murikipudi	Mar-22	Segmentation and classification performance of deep learning models using Biomedical Images
		PhD- 2011	YES	2013	Yes	S. Anil Kumar	Jan-23	Control the pink Bollworm in Cotton Crop using Deep Learning
3	Dr. S.N. Tirumala Rao	PhD- 2011	YES	2013	Yes	O. Gandhi	Jul-05	Biclustering of Multivariate Time Series Gene Data with Agreements Using High Performance Computing



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4	Dr. S.V.N. Sreenivasu	PhD- 2014	YES	2015	Yes	G. Surekha	Apr-22	Analysis of Satellite Image Data Using Deep learning Techniques
		PhD -2014	YES	2015	Yes	T. Kameswara Rao		Sanskrit to Telugu Machine Translation System - A Hybrid Approach
	Dr. K. Lakshminadh	PhD-2014	YES	2015	Yes	T. Venkateswarlu	Mar-24	Machine Learning
		PhD- 2017	YES	2018	Yes	G. Lakshmi Narayana	Dec-18	Machine Learning
5		PhD- 2017	YES	2018	Yes	T. Lakshmi	Mar-23	Enhancing Medical Image Data for Deep Learning Applications through Augmentation Techniques.
6	Dr. S.Siva Nageswara Rao	PhD - 2017	Yes	2023	Yes	O. Srinivas	Feb'2023	Mobile adhoc Network(MANET)
7	Dr.V.V.A.S.LAKSHMI	PhD	YES,	2018	YES	MURALI KRISHNA	Dec-18	An Enhanced quality of service mechanism in wireless sensor networks for secure data transmission.




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