

KAKATIYA INSTITUTE OF TECHNOLOGY & SCIENCE

Opp : Yerragattu Gutta, Hasanparthy (Mandal), WARANGAL - 506015, TELANGANA, INDIA

काकतीय प्रौद्योगिकी एवं विज्ञान संस्थान, वरंगल - ५०६०१५, तेलंगाना, भारत

కాకతీయ సాంకేతిక విజ్ఞాన శాస్త్ర విద్యాలయం, వరంగల్ - ౫౦౬ ౦౧౫ తెలంగాణ, భారతదేశము

(An Autonomous Institute under Kakatiya University, Warangal)

(Approved by AICTE, New Delhi; Recognised by UGC under 2(f) & 12(B); Sponsored by EKASILA EDUCATION SOCIETY)

website: www.kitsw.ac.in

E-mail: principal@kitsw.ac.in

☎ : +91 9392055211, +91 7382564888

Name of the Department: **Department of Information Technology**

Name of Research and Education center:

Research & Education Center DATA SCIENCE LAB

About the Center:

This research and Education centre equipped with high-end systems acquired in 2022, this facility serves as a pivotal resource for our ITD students, supporting various curriculum-related experiments and research works. Moreover, our lab plays a crucial role in facilitating minor and major projects for PG students and final-year UG students, allowing them to delve into cutting-edge technologies such as Machine Learning, Artificial Intelligence, Block Chain Technology, Cloud Computing, Cybersecurity, and more.

The primary functions of the center:

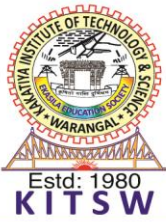
- Conducting original research across various disciplines to contribute new knowledge, insights, and innovations to the academic community and society at large.
- Providing a platform for faculty and students to engage in collaborative research projects, fostering a culture of inquiry, and promoting academic excellence.
- Encouraging collaboration and interdisciplinary research initiatives that involve faculty and students.
- Facilitating the transfer of research findings and innovations from the academic setting to practical applications in industry, healthcare, or other sectors.
- Providing training programs, workshops, and mentorship opportunities to enhance the research skills of PG & UG students.

Major equipments:

36 NODES with the following configurations:

Intel Core i5-10400 10th Gen,
8GB RAM, 1TB HDD, Keyboard, Mouse,
2GB Graphic card, 18.5 LED Monitor,
24 Port 10/100/1000 Gigabyte 2 No's Switches (D-LINK)

Good Ambience with Carrier Inverter split AC's, Projector, White Board



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Major software list with description:

1. TensorFlow	TensorFlow is an open-source machine learning framework released under the Apache License 2.0.
2. PyTorch	PyTorch is an open-source deep learning framework with a permissive license.
3. Scikit-learn	Scikit-learn is an open-source machine learning library released under the 3-clause BSD license.
4. Keras	Keras is an open-source high-level neural networks API that is now part of TensorFlow.
5. RapidMiner	RapidMiner offers a free and open-source version of its software, known as RapidMiner Go. It provides basic data science and machine learning capabilities.
6. H2O.ai	H2O.ai provides an open-source version of its platform called H2O-3, which is free to use. It includes machine learning and predictive analytics tools .

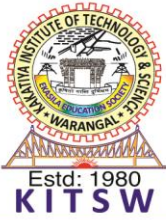
Types of projects / research carried out with description:

- PG Dissertation work – Data Science, Machine Learning, Artificial Intelligence
- UG Major Projects – IoT, Cloud Computing, Machine Learning
- Faculty Research Publication preparation with implementation results

Ongoing Projects:

Healthcare Projects:

- Brain Tumor Classification Using Fine-Tuned GoogLeNet Features and Machine Learning Algorithms: IoMT Enabled CAD System.
- MRI brain tumor detection and classification using parallel deep conventional neural networks
- Stroke Risk Prediction With Hybrid Deep Transfer Learning Framework
- Identification of major depression patients using machine learning models based on heart rate variability during sleep stages for pre-hospital screening
- Heart Disease Identification Method Using Machine Learning Classification in E-Healthcare
- Detection of Cardiovascular Diseases in ECG Images Using Machine Learning and Deep Learning Methods
- A Guided Neural Network Approach to Predict Early Readmission of Diabetic Patients
- A Smart Chatbot Architecture based NLP and Machine learning for health care assistance
- Intelligent and Interactive Healthcare System (I2HS) Using Machine Learning



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Smart Cities Projects:

- A fast and scalable authentication scheme in IOT for smart living
- Control of pests and diseases in plants using IOT Technology
- Camera-Based Smart Parking System Using Perspective Transformation
- Web Design and Application Programming Interface (API) Smart Farming Application
- Vehicles detection and counting based on internet of things technology and video processing techniques

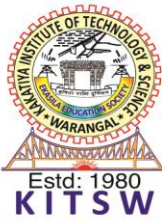
Machine Learning and Deep Learning projects:

- CNN Learning Strategy for Recognizing Facial Expressions
- Long Term Energy Savings Through user behavior modelling in smart homes
- A Novel Multi-objective medical feature selection compass method for binary classification
- Machine Learning Approaches for Combating Distributed Denial of Service Attacks in Modern Networking Environments
- Using Data Mining Techniques to Predict Student Performance to Support Decision Making in University Admission Systems
- Efficient Distributed Denial of service attack defence in SDM based Cloud
- An Integrated Scalable frame work for Cloud and IoT Based Green Health care System
- An Attention-Based Convolutional Neural Network for Intrusion Detection Model
- A Systematic Study on the Recommender Systems in the E-Commerce
- A Fraud Detection System Using Machine Learning
- Detecting Spam Email With Machine Learning Optimized With Bio-Inspired Metaheuristic Algorithms
- A Novel Multi-objective medical feature selection compass method for binary classification
- A novel authentication and key agreement scheme for Internet of Vehicles
- Comparing Different Resampling Methods in Predicting Students' Performance Using Machine Learning Techniques
- Explainable Artificial Intelligence for Developing Smart Cities Solutions
- Smart office automation using R-CNN based face recognition and internet of things
- Credit Card Fraud Detection Using State-of-the-Art Machine Learning and Deep Learning Algorithms

Research and Education Centre

Data Science Laboratory





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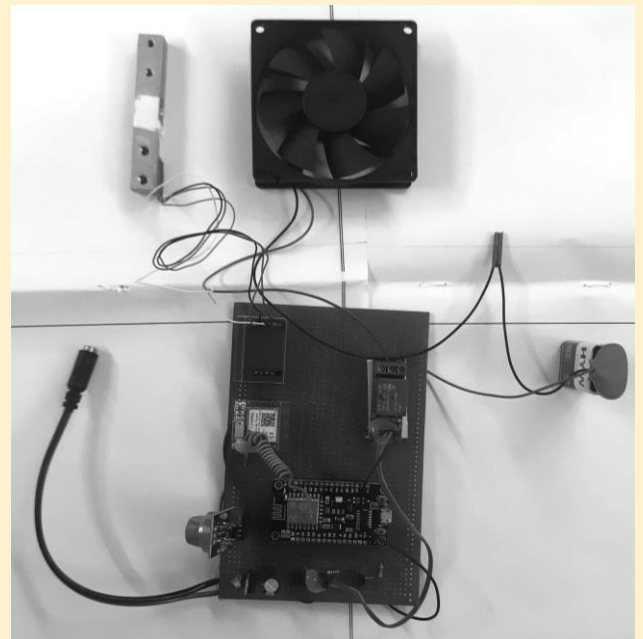
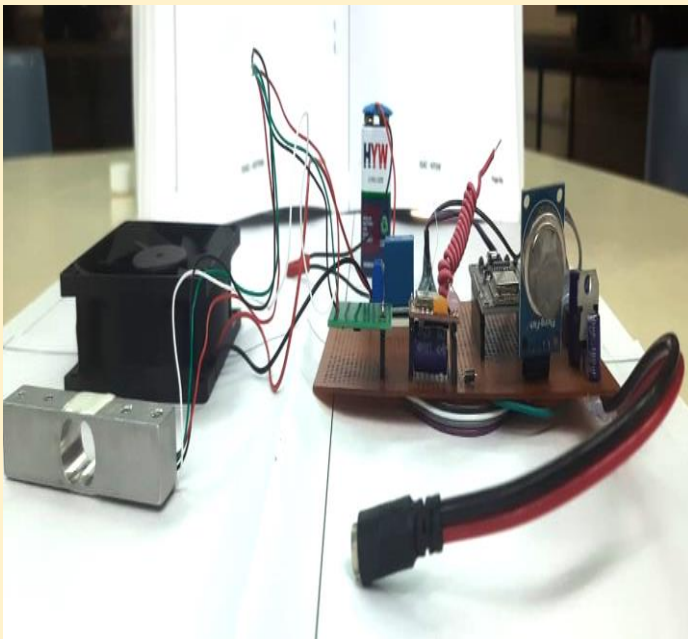
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**IoT Working Model:
Vehicle Speed control to
avoid accidents**



Fasten scalable authentication scheme for smart living

Faculty In-charge

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Head of the Department

Dr.T.Senthil Murugan
Associate Professor & Head

