STAFF PROFILE

K. MADHANA MOHAN

Associate Professor
Department of Electronics and
Instrumentation Engineering
Sri Sairam Engineering College,
Chennai

Research Specialization

Satellite Dynamics and Control
CubeSat Attitude Determination and Control Systems (ADCS)

Education

Ph.D (Part-Time) – Ongoing
Sathyabama Institute of Science and Technology
Research Area: Satellite Dynamics and Control

M.E – Applied Electronics

B.E – Electronics and Instrumentation Engineering

Professional Experience

• **Associate Professor**, Department of Electronics and Instrumentation Engineering, Sri Sairam Engineering College, Chennai – *June 2010 to Present*

• **Faculty (Part-Time Programme – Evening Session)**, Anna University, MIT Campus, Chennai – *6 months*

• **Lecturer**, Department of Electronics and Instrumentation Engineering, Raja Rajeswari Engineering College, Chennai – *1 year(approx.)*

Recent Work in Satellite and Space Technology

• Completed a **Remote Sensing and GIS internship with India Space Academy**, including a project on **mapping water bodies using NDWI from multispectral satellite imagery**.

• Completed a **CubeSats and Satellites internship at Skyline as a Project Trainee**, gaining exposure to **CubeSat subsystems and satellite mission concepts**.

• **Faculty Advisor for the CanSat Team-Team INVINCIBLE of Sri Sairam Engineering College**, guiding students in the design and development of CanSat systems for national-level competitions.

• **Active member of IEEE Aerospace and Electronic Systems Society (IEEE AESS)**, contributing to aerospace and satellite technology activities within the institution.

• Completed **four NPTEL courses related to Space and Aerospace Technology**, including

• Engaged in **research on CubeSat Attitude Determination and Control Systems (ADCS)** focusing on satellite dynamics and control algorithms.

Professional Memberships

- IEEE Member – Madras Section (Valid through 2026)
- Life Member – Instrument Society of India (ISOI)
- Life Member – Indian Society for Technical Education (ISTE)

Awards and Achievements

• **Best Paper Award** – *IoT Based Smart Waste Segregation*, International Conference on Computing and Communication Technologies (ICCCT 2025), Sri Sairam Engineering College, Chennai.

• **Faculty Advisor – Team Invincible**, which successfully **reached the Finals of the IN-SPACe CanSat Students Competition 2024–25**, organized by **ISRO–IN-SPACe** and conducted at **Kushinagar, Uttar Pradesh, India**.

• As **SPOC for the SkillsDA–NASSCOM Placement and Upskilling Program**, facilitated industry engagement and **successfully supported the placement of over a dozen students** through coordinated training, certification, and placement activities.

• As **SPOC for the DST NIDHI Entrepreneur-in-Residence (NIDHI-EIR) Program** at **MaDeIT Innovation Foundation**, facilitated student participation in the national innovation ecosystem, where **two student startups successfully benefited from the NIDHI program**.

Reviewer Contributions

- Reviewer – **ICNEXTS 2025**
  International Conference on NextGen Engineering Technologies and Applications for Sustainable Development
  St. Joseph's College of Engineering
- Reviewer – **IEEE PUNECON 2025**
- Reviewer – **International Conference on Emerging Technologies in Electronics and Green Energy (ICETEG 2025)**

NPTEL Courses Completed

- Introduction to Airplane Performance
- Aircraft Control Systems with MATLAB/Simulink
- Intelligent Feedback and Control
- Control Systems
- Advanced Linear Continuous Control Systems
- Effective Engineering Teaching in Practice

Research Interests

- CubeSat Attitude Estimation
- Satellite Dynamics
- Reinforcement Learning Based Control
- Sensor Fusion
- Aerospace Control Systems

Publications

1. **Smart Dustbin** – International Journal of Engineering and Advanced Technology (IJEAT), 2019
2. **A Drowsiness Detection Using Smart Sensors During Driving and Smart Message Alert System to Avoid Accidents** – AIP Conference Proceedings, 2022
3. **CubeSat Attitude Control by Implementation of PID Controller Using Python** – IEEE 12th International Conference on Advanced Computing (ICoAC), 2023
4. **Industrial Automation System** – Advance in Electronic and Electric Engineering, 2013
5. **Engine Oil Condition Monitoring Using IoT and Predictive Analysis** – Journal of Critical Reviews, 2020
6. **Economic and Efficient Prevention of Soiling in Solar Panels** – International Journal of Pure and Applied Mathematics
7. **IoT Based Smart Waste Segregation** – International Conference on Computing and Communication Technologies (ICCCT), 2025

8. **Predicting Crops Based on Soil and Environmental Characteristics Using ARIMA and LSTM Model** – IEEE International Conference on Mobile Networks and Wireless Communications, 2024
9. **IoT Based Monitoring and Controlling of Pressure Process Station** – AIP Conference Proceedings, 2022
10. **Vehicle to Vehicle Communication Using Li-Fi** – National Conference on Advancements in Mechanical Sciences, 2023
11. **Space Vector Modulation Techniques Based Speed Control of Induction Motor Using DTC** – AIP Conference Proceedings, 2022
12. **IoT Based Smart Irrigation and Soil Management System** – International e-Conference on Green Technologies for Power Generation, 2021
13. **Automated Safety System for Driver and Pillion Rider in Two Wheeler** – UGC CARE Journal, 2020
14. **Solar Energy Based Automated Water Distribution with Leakage Detection Using PLC and SCADA** – International Conference on Contemporary Engineering and Technology
15. **Automatic Bicycle for Physically Challenged** – Journal of Applied Science and Computations, 2019
16. **Accident Prevention by Monitoring and Control of Vehicle Tyre Pressure Using Wear & Tear and Pressure Sensor** – International Journal of Recent Technology and Engineering, 2009
17. Vehicle to Vehicle Communication Using Li-Fi – National Conference on Advancements in Mechanical Sciences (2023

Workshops Attended

• **Robotics and Industrial Applications** – IET (UK) Young Professionals Section, Dr. MGR Educational and Research Institute, Chennai (2011)

• **Industrial Automation** – Department of Electronics and Instrumentation Engineering in association with Prolific Systems (2011)

• **Intelligent Modeling and Control Using MATLAB and LABVIEW** – CSIR Sponsored National Workshop, Easwari Engineering College (2011)

• **Modern PID Controllers and Their Capabilities** – ISA South India Section, Chennai (2011)

• **Industrial Internet of Things (IIoT)** – Crescent University (2018)

• **Process Automation Using MATLAB** – Sri Sairam Engineering College (2018)

• **Application of Power Electronic Converters in Solar Photovoltaic Systems – MATLAB Hands-on** – Vellore Institute of Technology (2018)

• **Patent Searching, Drafting and Filing** – Turnip Innovations, Exilyze Intellectual Services, IEEE Computer Society & CSI (2020)

Faculty Development Programmes (FDP)

• **Advanced Control Systems** – Madras Institute of Technology, Anna University (2015)

• **Entrepreneurship Career Development Program** – Sri Sairam Institute of Management Studies (2019)

• **Faculty Development Programme –** Teaching Learning Centre, IIT Madras (2019)

• **Neural Networks and Convolutional Neural Networks** – AICTE Recognized FDP, NITTTR Chandigarh (2020)

• **Industrial Automation Using PLC/SCADA with IoT** – Vellore Institute of Technology, Chennai (2020)

• **Control Systems and Sensors Technology** – AICTE ATAL Academy FDP, Madan Mohan Malaviya University of Technology (2020)

• ATAL FDP – **Recent Progress in Process Modelling, Simulation and Process Control**
National Institute of Technology Tiruchirappalli

• NPTEL Course – **Intelligent Feedback and Control**

• International FDP – **Advances in Nonlinear Dynamics: Methods and Applications**
VIT-AP University

Patents

• A patent titled **"Automated Safety System for Driver and Pillion Rider in Two-Wheeler"** (Application No. 202041043044 / 41/2020) was **published on 09 October 2020**, with K. Madhana Mohan as one of the inventors.

• A patent titled **"Smart Driver Guidance System for Indian Roads"** (Application No. 202041028100 / 28/2020) was **published on 10 July 2020**, with K. Madhana Mohan as one of the inventors.

• A **Design Patent titled "A Smart Watch Stand" (Design No. 350625-001)** was **granted and published on 04 October 2021**, with K. Madhana Mohan as one of the inventors.

• A patent titled **"Automated Pipeline Monitoring and Safety System"** (Application No. 202341060158 / 42/2023) was **published on 20 October 2023**, with K. Madhana Mohan as one of the inventors.

• A patent titled **"Enhancing E-Commerce Fraud Detection Through Machine Learning and Personality Analysis for a Secure Digital Economy"** (Application No. 202411093078) was **published on 03 January 2025**, with K. Madhana Mohan as one of the inventors