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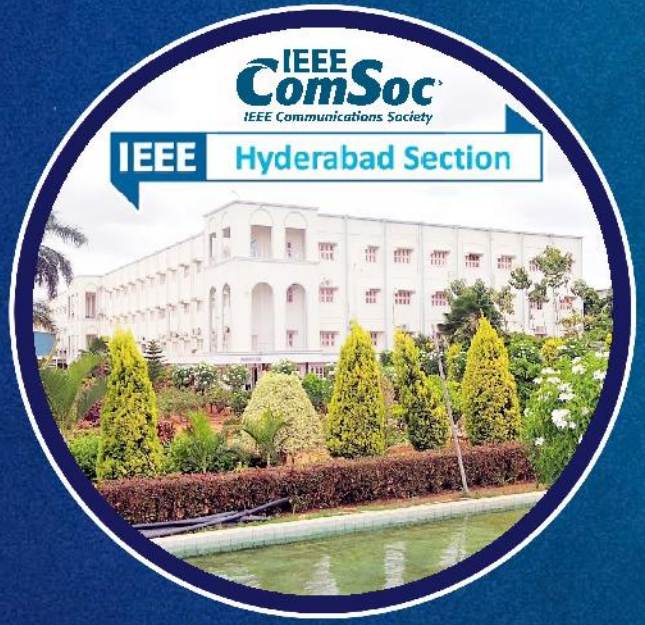
IEEE Communication Society, Hyderabad Section
Sponsored
Five days Faculty Development Program on

"Engineering Research Application of Artificial Intelligence (AI), Machine Learning (ML), and Internet of Things (IoT) using MATLAB"

20th - 24th November 2023

(Hybrid Mode)



MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE

(UGC-AUTONOMOUS INSTITUTION)

Madanapalle-517325, Annamayya Dist., Andhra Pradesh

ABOUT MITS

Madanapalle Institute of Technology & Science was established under the auspices of Ratakonda Ranga Reddy Educational Academy, established in the year 1998, under the visionary and proactive leadership of Dr. N.Vijaya Bhaskar Choudary, Secretary & Correspondent.

MITS is the most sought-after premier institution in the charismatic silhouette of Horsley Hills, in the hilly regions of Madanapalle, Annamayya district of Andhra Pradesh, adjudged by ISTE as one of the best Engineering colleges.

MITS has grown over the years to become one of the premier institutions in Andhra Pradesh that students aspire to join. Governed by the progressive thoughts of the Management, MITS always strives conscientiously to excelmin various domains of academics, research, and contribution to society by fostering collaborations with global academics and industry. An excellent academic atmosphere and hi-tech facilities have been created for the faculty and students to pursue their professional careers and personal goals.

ABOUT DEPARTMENT

The Department of Electronics & Communication Engineering started functioning in the academic year 1998 for the B. Tech course. The department stresses the all-round development of the students, faculty, and laboratory staff by providing them with a conducive academic environment and necessary infrastructure for academic and research work. A sense of self-discipline and responsibility is inculcated in the students and staff. The department has distinguished faculty, most of them holding Ph.D. degrees.

The Department obtained UGC-Autonomous Status in 2014 and is running the program successfully, meeting all the requirements. The B.Tech Program under the Department of Electronics & Communication Engineering was accredited by the National Board of Accreditation (NBA) of the All India Council for Technical Education (AICTE).

ABOUT WORKSHOP

The workshop is designed to provide participants with a comprehensive understanding of how cutting-edge technologies can be applied to engineering research. MATLAB, a robust programming and simulation tool, will be the central platform for exploring the integration of AI, ML, and IoT in various engineering domains.

WORKSHOP HIGHLIGHTS

1. Participants will receive an overview of these transformative technologies, their principles, and real-world applications in engineering.
2. The workshop will cover essential MATLAB concepts and techniques to help participants get started with programming & simulation.
3. Learn how AI and ML algorithms can be applied in engineering research to optimize processes, make predictions, & solve complex problems.
4. Explore the Internet of Things and understand how sensors, data collection, and connectivity can enhance engineering research.
5. Real-world engineering case studies will be discussed to showcase the practical applications of AI, ML, and IoT.
6. Learn about the potential research areas in engineering that can benefit from AI, ML, and IoT integration.
7. The workshop provides opportunities to connect with fellow researchers, instructors, and experts in the field.

This workshop is ideal for engineering students, faculties, researchers, and professionals looking to enhance their AI, ML, and IoT skills and how they can be effectively implemented using MATLAB. By the end of the workshop, participants will be equipped with the knowledge and tools to apply these technologies to their engineering research projects, making them more innovative and efficient.

REGISTRATION

IEEE Members- ₹ 100
Non-IEEE Members- ₹ 150

Note: Online registration is mandatory.
Registration link: ***https://forms.gle/TPMGEJAy2euN8Shc9***

Bank account details :-

Name of the Account	**:- MITS I.E.E.E**
A/c No	**:- 75690100010575**
Account Type	**:- Current Account**
Bank	**:- Bank of Baroda , Madanapalle**
IFSC Code	**:- BARB0VJMADA**

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Chief Patrons:

Dr. N. Vijaya Bhaskar Choudary,
Secretary & Correspondent

Mrs. Keerthi Nadella,
Executive Director

Patron

Dr. C. Yuvaraj
Principal

Convener

Dr. S.Rajasekaran
Head of the Department
Electronics and Communication Engineering

Coordinators

Dr. Sourav Ghosh
Assistant Professor, ECE, MITS
MITS - MATLAB Coordinator,

Dr. Kumar C
Asssistant Professor, ECE, MITS
Treasurer - IEEE ComSoc,
Hyderabad Section

Resource person

Mr. Prem Kumar. J & Team
Product Manager
Capricot Technologies Pvt.Ltd, Hyderabad
(Mathworks Authorized Dealer)

MATLAB

Program Schedule

20th November 2023

	Algorithm Development with MATLAB
Forenoon	• Introduction to MATLAB • Data Importing and Exporting with MATLAB • Analyzing and Visualizing Data with MATLAB • Graphics-2D & 3D and Interactive Plotting • Algorithm Development with MATLAB • Live Editor and its uses
	Dynamic System Modelling with Simulink
Afternoon	• System Modelling with Simulink • Importance of Solvers and different Solvers available in Simulink • Data Import and Export between MATLAB and Simulink • Dynamic System Modelling with Simulink

21st November 2023

	Signal Processing with MATLAB
Forenoon	• Signal Processing with MATLAB • Signal Processing with DSP System Toolbox • Filter Design and Analysis with MATLAB and Simulink • HDL Code Generation with MATLAB and Simulink
	Image Processing and Computer Vision with MATLAB and Simulink
Afternoon	• Image Processing with MATLAB • Apps and its uses in Image Processing • Computer Vision with MATLAB and Simulink • Live video Processing with MATLAB and Simulink • Engineering Applications of Image Processing and Computer Vision using MATLAB and Simulink

22nd November 2023

	Machine Learning with MATLAB
Forenoon	• Introduction to Machine Learning (ML) • Data Collection and Datasets used for Machine Learning • Feature Extraction for Machine Learning • Supervised Learning and Unsupervised Learning • Challenges in Feature Extraction in Machine Learning • Application of Machine Learning in Sensor Data • Application of Machine Learning in Digital Images
	Deep Learning with MATLAB and Simulink
Afternoon	• Introduction to Artificial Intelligence (AI) • Introduction to Deep Learning • Architecture of Convolutional Neural Network (CNN) • Designing CNN from Scratch • CNN Design and Training with Deep Network Designer App • Engineering Applications of Deep Learning

23rd November 2023

	Transfer Learning and Python Integration with MATLAB
Forenoon	• Transfer Learning and its Advantages • MATLAB Support to Open Sourced Pre Trained Models • Adding, Importing Pre-Trained Models into MATLAB and its Applications • Converting TensorFlow Models into MATLAB Networks • Using MATLAB with Python for Deep Learning
	Engineering Applications with MATLAB and Simulink
Afternoon	• Discussion on Engineering Applications with MATLAB and Simulink

24th November 2023

	Hardware Support with MATLAB and Simulink
Forenoon	• Introduction to Hardware Support with MATLAB and Simulink • Installing Hardware Support Packages • Academic Resources available with MathWorks • Technical Support from MathWorks
	MATLAB and Simulink for IOT Applications
Afternoon	• Introduction to ThingSpeak • Reading and Writing Sensor Data in ThingSpeak • Analysis and Visualization of Sensor Data in ThingSpeak • Applications of IOT

CONTACT

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IEEE Hyderabad Section

IEEE ComSoc
IEEE Communications Society

MITS IEEE Student Branch

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CELEBRATING MITS 25 Years ACADEMIC EXCELLENCE

MATLAB