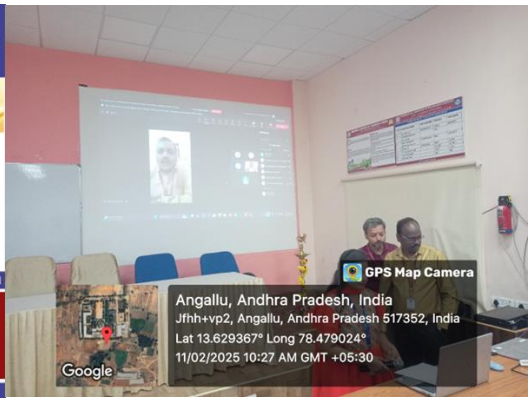
A Report on One-Day Expert Talk on
"Innovative Virtual Simulators for Agile, Cost-Effective, and Efficient Robotics Learning"
Organized by
Department of Electronics & Communication Engineering
in association with MITS- IETE Student Forum
on 11.02.2025

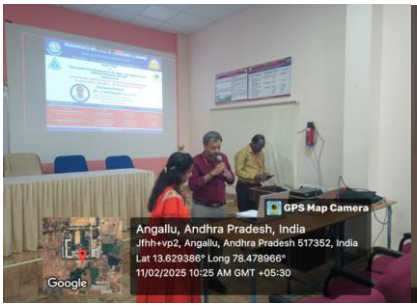


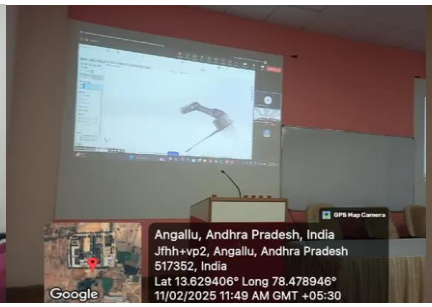
Report Submitted by: Dr. Kumar C, Assistant Professor, Department of ECE, Mr. Prasanth V. S, Assistant Professor, Department of ECE.
Resource Person Details: Dr. J. Sudharsan, PhD (Robotics), Director, IIIRPD Robo tech LLP, Hyderabad.
No of Participants: 120
Time: 10.00 AM to 12.30 PM
Venue: Seminar Hall A, MITS
Report Received on 20.02.2025
Mode of Conduct: Offline

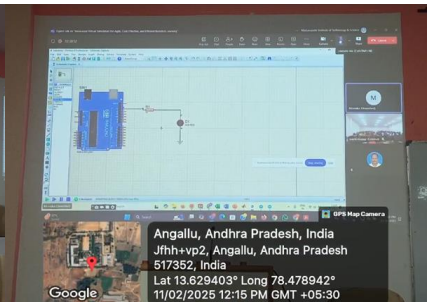
Detailed Report of the Event:

Department of Electronics and Communication Engineering in association with MITS ISF (IETE Student Forum) organized one day Expert talk on "Innovative Virtual Simulators for Agile, Cost-Effective, and Efficient Robotics Learning" on 11.02.2025. MITS ISF Students Volunteers welcomed the gathering, Dr. V. Ramanathan, Fellow Member in IETE, Vice Principal Academics motivated the students to learn new developing skills required for industry and also motivated the students to update their knowledge by joining technical forums. Dr. S. Rajasekaran, Professor and Head of the department of Electronics and Communication Engineering motivated the students who have willingly participated to gain knowledge on Robotics. Also, he expressed his gratitude to the Program Guest Dr. Sudharsan J and Ms. Monika for their interest on sharing knowledge to Student Community. Mr. Prasanth V S, Assistant Professor, Department of Electronics & Communication Engineering and Co-Coordinator for MITS ISF (IETE Student Forum) introduced the program Guest Dr. Sudharsan J, Director, IIIRPD Robo tech LLP, Hyderabad and the session was handed over to the Guest Speaker. Dr. J. Sudharsan explained placement opportunities in the India and other foreign Countries. He explained about the International Federation of Robotics (IFR) with the past three years development of robotics. He expressed the need of Robotics in the modern age. Japan is the country who produce more Robotic hardware for the last 5 years. He explained various Robotic design software like Gazebo, SolidWorks, AutoCAD, Robot Operating System (ROS). Ms Monika, Secretory, IIIRPD Robo tech LLP gave demonstration of Single ARM robot design using Solid Works software and the analysis was done by exporting the design part to MATLAB Simulink. She simulated the Robotic arm with 4 free scaling part / Joints and one freedom hand. Through the MATLAB Simulink the elements angular motions were controlled. The output was also observed on the display of MTALAB. She also explained Proteus Software for Virtual Circuit design for Robotic Processing elements.

Dr. C. Kumar, Fellow Member in IETE, Assistant Professor, Department of Electronics & Communication Engineering proposed vote of thanks.







Outcome:

1. **Enhanced Understanding of Robotics and Simulators:** Participants gained insights into innovative virtual simulators and their role in agile, cost-effective, and efficient robotics learning. The session highlighted the importance of robotics in the modern age and its growing relevance in industries worldwide.
2. **Exposure to Global Robotics Trends:** Attendees learned about the global robotics landscape, including the dominance of certain countries in robotic hardware production and the development of robotics over the past three years as reported by the International Federation of Robotics (IFR).
3. **Hands-On Demonstration of Robotic Design:** A practical demonstration of designing a single-arm robot using SolidWorks software was conducted. The design was exported to MATLAB Simulink for analysis, showcasing how angular motions of robotic elements can be controlled and observed in real-time.

4. **Awareness of Career Opportunities:** The session provided valuable information on placement opportunities in robotics, both in India and abroad, motivating students to pursue careers in this field and update their skills to meet industry demands.
5. **Motivation to Join Technical Forums:** Students were encouraged to join technical forums and engage in continuous learning to stay updated with the latest advancements in robotics and related technologies, fostering a culture of innovation and skill development.