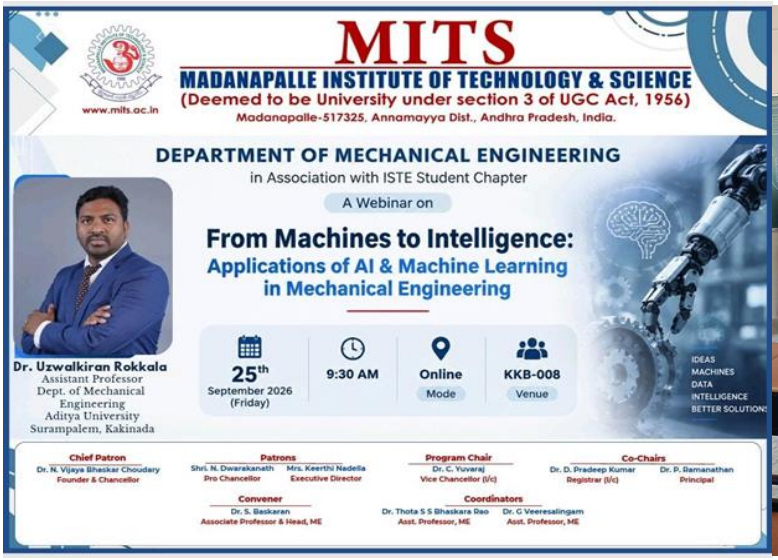
MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE
(Deemed to be University)
Affiliated to JNTUA, Ananthapuramu & Approved by AICTE, New Delhi
NAAC Accredited with A+ Grade, NIRF India Rankings 2025 - Band: 201-300 (Engg.)
NBA Accredited - B.Tech. (CIVIL, CSE, ECE, EEE, MECH, CST), MBA & MCA

A Report on Webinar titled
"From Machine to Intelligence: Application of AI & Machine Learning in Mechanical Engineering"
Organized by Department of Mechanical Engineering
on 26.09.2026



Report Submitted by: Dr. G. Veeresalingam, Assistant Professor, Department of Mechanical Engineering
Event Coordinators: Dr Thota S S Bhaskara Rao, Assistant Professor, Department of Mechanical Engineering; Dr. G. Veeresalingam, Assistant Professor, Department of Mechanical Engineering
Mode of Conduct: Online
Number of Students Attended: 46 (IVth Year-Mechanical)
Report Received on 28.09.2026

The department of mechanical engineering organized a guest lecture with association of ISTE Student Chapter of MITS on "**From Machine to Intelligence: Application of AI & Machine Learning in Mechanical Engineering**" on 25th September 2026 in KKB008 at 9:30 A.M

Objective of the Event:

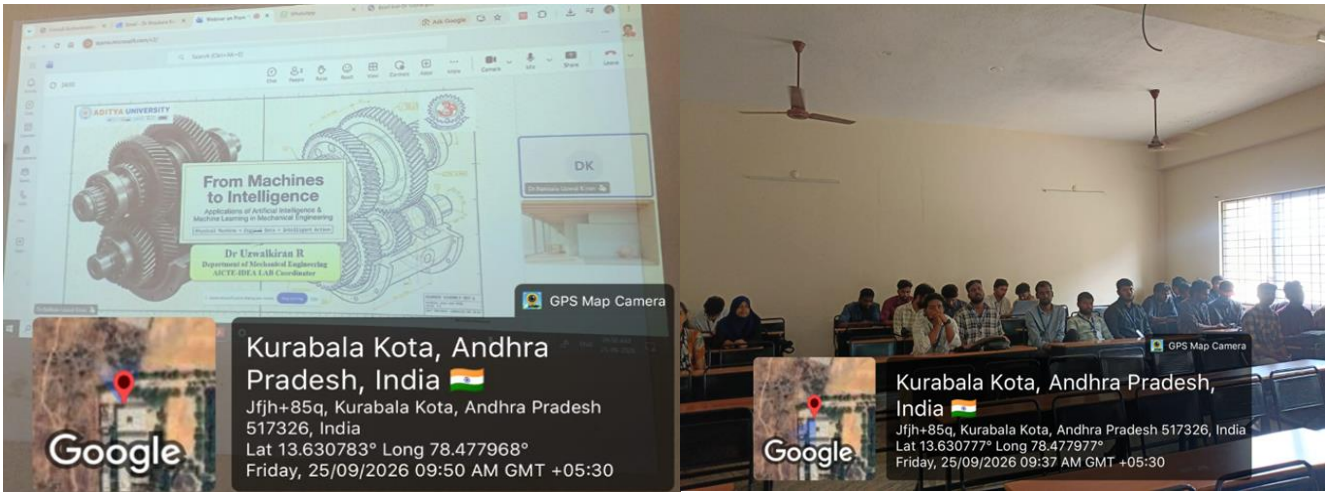
The objective of the guest lecture "From Machine to Intelligence: Application of AI & Machine Learning in Mechanical Engineering" is to introduce students to the growing role of Artificial Intelligence (AI) and Machine Learning (ML) in modern mechanical engineering. The programme aims to bridge the gap between conventional mechanical engineering concepts and emerging digital technologies by demonstrating how AI/ML can be applied to real-world engineering problems.

The key objectives are to:

- Introduce the fundamental concepts of Artificial Intelligence, Machine Learning and Data-Driven Engineering.
- Explain the integration of AI/ML with core mechanical engineering domains such as design, manufacturing, robotics, automotive engineering, thermal systems and maintenance.
- Familiarize students with applications such as predictive maintenance, intelligent manufacturing, tool-wear prediction, computer vision, digital twins and design optimization.
- Demonstrate how sensor data, engineering simulations and machine-learning algorithms can be combined for intelligent decision-making.
- Encourage students to develop interdisciplinary skills in mechanical engineering, programming, data analytics and AI.
- Provide awareness about emerging research, project and career opportunities in AI-enabled mechanical engineering.

Programme Details:
The guest lecture provided an overview of the transformation of conventional machines into intelligent systems through the integration of AI, ML, sensors and data analytics. The session begins with the evolution of mechanical engineering from traditional machine-based systems to smart and intelligent engineering systems.

The programme covered the basic concepts of AI, ML and Deep Learning, followed by their applications in various mechanical engineering areas. Particular emphasis will be given to predictive maintenance and fault diagnosis, where machine vibration, temperature and other sensor data can be used to identify faults and predict machine condition.



The lecture also discussed the applications of AI in CNC machining, tool-wear prediction, smart manufacturing, robotics, computer vision, digital twins, automotive engineering, electric vehicles, thermal systems, CFD, structural analysis and generative design. Examples of AI-based engineering projects will be presented to help students understand the practical implementation of these technologies.

The session concluded with a discussion on the future skills required for mechanical engineers, including Python programming, data analytics, machine learning, sensors, IoT and digital-twin technologies, while emphasizing the importance of strong fundamentals in mechanical engineering. The programme will also provide students with guidance on potential academic projects, research areas and career opportunities at the intersection of mechanical engineering and AI.

Acknowledgments:

I express my sincere gratitude to Honorable Chancellor, Pro-Chancellor, Vice-Chancellor, Registrar, Additional Registrar, Dean - School of Engineering, Principal, Vice Principal (Administration), and HOD Mechanical Engineering for their unwavering support and encouragement for conducting the online webinar.