



ROBOTECH

MONTHLY NEWSLETTER

ROBOTICS AND AUTOMATION

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VISION

Progress through quality education and evolve into a center for academic excellence in the field of Robotics and Automation.

MISSION

To provide a supportive academic environment for value-added education and continuous improvement to become the leaders in robotic research and education. To develop socially responsible engineers with technical competence, leadership skills and team spirit.



Expert Talk on “Designing a Fruitful Career in the AI Era”



NAAC **NBA** **Adi Shankara** **INSTITUTE OF ENGINEERING AND TECHNOLOGY** **ISA**

Dept of Robotics and Automation

EXPERT TALK ON
“Designing a fruitful career in AI era”

Organised By Dept of Robotics and Automation Association

7th APRIL 2026
TIME: 10AM

VENUE: CS SEMINAR HALL

Mr Mohammed Ajmal C
Co-founder and CEO of X and Y Learning

The Department of Robotics and Automation Engineering, Adi Shankara Institute of Engineering and Technology, Kalady, successfully organized an expert talk titled “Designing a Fruitful Career in the AI Era” on 7 April 2026 at 10:00 AM in the CS Seminar Hall. The event was conducted under the aegis of the Department of Robotics and Automation Association with the objective of guiding students towards emerging career opportunities in Artificial Intelligence and related technologies.

The session was delivered by Mohammed Ajmal C, Co-founder and CEO of X and Y Learning, who shared valuable insights into the rapidly evolving AI landscape and its impact on future careers. The speaker emphasized the importance of continuous learning, adaptability, and interdisciplinary skills in an era increasingly driven by intelligent systems and automation.

The session witnessed enthusiastic participation from students and faculty members. The interactive question-and-answer segment provided attendees with an opportunity to clarify career-related concerns and gain practical guidance from an industry expert. Students actively engaged in discussions regarding skill development, job market trends, entrepreneurship opportunities, and the future of automation.



HANDS-ON WORKSHOP ON “SENSOR INTERFACE WITH ARDUINO BOARD”



Adi Shankara
INSTITUTE OF ENGINEERING AND TECHNOLOGY

Dept. of Robotics and Automation

Hands on workshop on
**Sensor interface with
Arduino board**

Batch:2025-2029 RA
Date : 24/03/2026
Venue: Robotics Lab

Faculty coordinator:
Dileep K
Assistant professor
RA dept.

Shinu M M
Assistant Professor
Electronics and Biomedical Eng.

The Department of Robotics and Automation Engineering, Adi Shankara Institute of Engineering and Technology, Kalady, successfully conducted a Hands-on Workshop on “Sensor Interface with Arduino Board” on 24 March 2026 at the Robotics Laboratory. The workshop was organized for the 2025–2029 batch of Robotics and Automation students with the objective of introducing fundamental concepts of sensor interfacing and embedded system programming using the Arduino platform.

The resource person for the session was Shinu M M, who guided the participants through the theoretical and practical aspects of integrating sensors with microcontroller-based systems.

The session commenced with an introduction to Arduino architecture, programming environment, and its significance in robotics, automation, and Internet of Things (IoT) applications. Students were familiarized with various types of sensors commonly used in engineering systems, including temperature, ultrasonic, infrared, light, and motion sensors. Participants actively engaged in hands-on experiments, connecting sensors to Arduino boards and observing real-time responses through coding exercises. The workshop provided valuable exposure to embedded system development and demonstrated how sensor technologies form the foundation of intelligent robotic and automated systems

Student Welfare Funds



Abishree Sreekanth (S8RA)



Devu M D (S8RA)



ASHIQUE O S (S8RA)



SWAROOP S (S8RA)



PARVATHY KRISHNA (S4RA)



BINTO P B (S4RA)



Aiswarya Muraleedharan (S2RA)



Malavika Suresh (S2RA)

PRABODHA 2026 – Project Competition Result

The Department of Robotics and Automation Engineering proudly celebrates the achievements of its students at PRABODHA 2026 Project Competition. The event showcased innovative projects demonstrating creativity, technical expertise, and practical problem-solving skills.

🏆 **First Position: Versa Nova: The Underwater Robot**

Team Members: Dino Davis, Adhithya Anilbhat, Karthik Biju, Nandhana K D

🥈 **Second Position: Design and Development of Ornithopter Mechanism**

Team Members: Sneha Alphonso Francis, Nandhana Sunil

🥉 **Third Position (Shared): Sree Shankaracharya Facial Robot**

Team Members: Indrajith V S, Sonu Namboothiri, Sruthi Biju, Surya S R

🥉 **Third Position (Shared): Autonomous Amphibious Robot**

Team Members: Swaroop S, Akshay Raj B



The department congratulates all winners and participants for their outstanding contributions and innovative spirit, which continue to strengthen the culture of research and technological excellence within the department.

WINNER

Industrial Automation Quiz Competition



Meghana Reji

3rd Year Robotics and Automation Engineering
Adi Shankara Institute of Engineering and Technology

Congratulations!

Meghana Reji, a third-year Robotics and Automation Engineering student of Adi Shankara Institute of Engineering and Technology, secured victory in the Industrial Automation Quiz Competition organized by Goose Elevate in association with Siemens Channel Partner. The achievement highlights her excellence and knowledge in the field of industrial automation.

NPTEL ONLINE CERTIFICATIONS ACHIEVED BY STUDENTS



Congratulations to our students for successfully completing NPTEL online courses and achieving Elite certifications!

Elite
NPTEL ONLINE CERTIFICATION
 (Funded by the MoE, Govt. of India)

This certificate is awarded to
BINTO P B
 for successfully completing the course
Advanced Robotics
 with a consolidated score of **60** %

Online Assignments	21.25/25	Proctored Exam	39/75
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Total number of candidates certified in this course: **443**

Jan-Apr 2026
 (12 week course)

Prof. Satyaki Roy
 NPTEL Coordinator
 IIT Kanpur

Indian Institute of Technology Kanpur

TEL34S554400035 To verify the certificate No. of credits recommended: 4

Elite
NPTEL ONLINE CERTIFICATION
 (Funded by the MoE, Govt. of India)

This certificate is awarded to
NAMITHA NANDAKUMAR
 for successfully completing the course
Advanced Robotics
 with a consolidated score of **69** %

Online Assignments	19.69/25	Proctored Exam	48.98/75
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Total number of candidates certified in this course: **443**

Jan-Apr 2026
 (12 week course)

Prof. Satyaki Roy
 NPTEL Coordinator
 IIT Kanpur

Indian Institute of Technology Kanpur

TEL26ME34S660300130 To verify the certificate No. of credits recommended: 4

Elite
NPTEL ONLINE CERTIFICATION
 (Funded by the MoE, Govt. of India)

This certificate is awarded to
AGNES THOMAS
 for successfully completing the course
Advanced Robotics
 with a consolidated score of **78** %

Online Assignments	23.75/25	Proctored Exam	54.69/75
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Total number of candidates certified in this course: **443**

Jan-Apr 2026
 (12 week course)

Prof. Satyaki Roy
 NPTEL Coordinator
 IIT Kanpur

Indian Institute of Technology Kanpur

TEL26ME34S554400264 To verify the certificate No. of credits recommended: 4

Elite
NPTEL ONLINE CERTIFICATION
 (Funded by the MoE, Govt. of India)

This certificate is awarded to
RIJO TOM VARGHESE
 for successfully completing the course
Advanced Robotics
 with a consolidated score of **57** %

Online Assignments	22.5/25	Proctored Exam	34.37/75
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Total number of candidates certified in this course: **443**

Jan-Apr 2026
 (12 week course)

Prof. Satyaki Roy
 NPTEL Coordinator
 IIT Kanpur

Indian Institute of Technology Kanpur

No: NPTEL26ME34S554400281 To verify the certificate No. of credits recommended: 4



Great learning. Stronger future.
 Keep learning, keep growing!

FACULTY ACHIVEMENTS

NPTEL CERTIFICATIONS



Prof. Ranjeesh R Chandran >>

Successfully completed the 8-week NPTEL course "Wheeled Mobile Robots" with an **Elite Certificate**.
He also earned an **Elite Certificate** and **Silver Medal** in the 12-week NPTEL course "Sensors and Actuators."



Dr. Athira M >>

Successfully completed the NPTEL course "Collaborative Robots (COBOTS) – Theory and Practice" with an **Elite Certificate** and **Silver Medal**, and also completed the course "Modelling and Simulation of Dynamic Systems" with an **Elite Certificate**.



Prof. Dileep K >>

Successfully completed the NPTEL course "Advanced Robotics Applications" with a score of **84%**, earning **Elite with Silver Certification** and securing a position among the **Top 5%** of candidates.
He also completed the course "Python for Data Science" with a score of **79%**, achieving **Elite with Silver Certification** and ranking in the **Top 5%**.



Ms. Safeena M K >>

Successfully completed the 12-week NPTEL course "Problem Solving Through Programming in C" with an **Elite Certificate** and **Silver Medal**.



Mr. Arun Kumar K >>

Successfully completed the course "Patent Drafting for Beginners" with a commendable score.



Dr. Julia T J >>

Successfully completed the 12-week NPTEL courses "Mathematical Foundations of Machine Learning" with an **Elite Certificate** and "Affective Computing" with an **Elite Certificate** and **Gold Medal**.



Prof. Deepa K Davis >>

Successfully completed the 12-week NPTEL course "Microprocessors and Microcontrollers" and the 8-week NPTEL course "Wheeled Mobile Robots" with commendable scores.



Ms. Sangeetha M S >>

Successfully completed the 12-week NPTEL course "Microprocessors and Microcontrollers" with commendable scores.



NPTEL

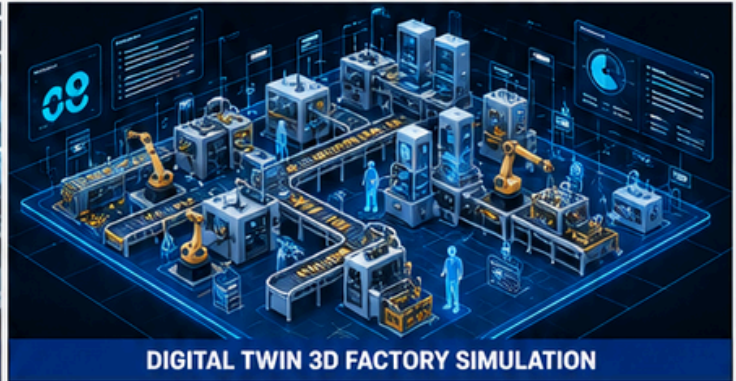


Heartiest
Congratulations

AI-POWERED DIGITAL TWIN FACTORIES



SMART FACTORY CONTROL ROOM



DIGITAL TWIN 3D FACTORY SIMULATION



OVERVIEW

In 2025, AI-powered Digital Twin technology has become one of the most significant innovations in advanced manufacturing. A digital twin is a virtual replica of a physical system that continuously receives real-time data from sensors and connected devices. Industries such as automotive, aerospace, and electronics are increasingly adopting this technology to monitor operations, predict failures, and optimize production efficiency.

By integrating Artificial Intelligence (AI), Industrial Internet of Things (IIoT), cloud computing, and simulation technologies, digital twins enable manufacturers to visualize and analyze factory operations before implementing changes in the real environment. This innovation is transforming conventional factories into intelligent and data-driven production systems.

TECHNOLOGICAL ARCHITECTURE OF THE SYSTEM

The Digital Twin Factory consists of interconnected machines, IoT sensors, cloud-based platforms, and AI analytics engines. Data collected from equipment is transmitted to a virtual model that accurately mirrors the physical factory in real time.

Key Technologies Include:

-  Industrial Internet of Things (IIoT) Sensors
-  Artificial Intelligence and Machine Learning
-  Cloud Computing Platforms
-  Edge Computing Systems
-  Predictive Maintenance Algorithms
-  Real-Time Data Analytics
-  Cyber-Physical Production Systems

The virtual model continuously updates operational parameters, enabling engineers to simulate production scenarios, identify bottlenecks, and improve manufacturing performance without disrupting actual operations.



ROLE OF ARTIFICIAL INTELLIGENCE

Artificial Intelligence acts as the decision-making engine of the digital twin system. Machine learning algorithms process large volumes of operational data to identify patterns, predict equipment failures, and optimize production schedules.

AI-powered analytics can detect abnormalities before breakdowns occur, recommend maintenance actions, and automatically adjust operating parameters for maximum efficiency. Unlike traditional monitoring systems that simply report events, AI-enabled digital twins actively support intelligent decision-making and continuous improvement.



ADVANTAGES OVER TRADITIONAL FACTORIES



Reduced machine downtime



Improved production efficiency



Lower maintenance costs



Enhanced product quality



Faster process optimization



Better resource utilization



Improved workplace safety



Reduced energy consumption



Real-time operational visibility

Increased manufacturing flexibility



BROADER IMPACT ON INDUSTRY

Digital Twin technology is accelerating the global transition toward Industry 4.0. Beyond manufacturing, digital twins are being utilized in healthcare, smart cities, transportation networks, energy systems, and infrastructure management.

As AI and connectivity technologies continue to advance, digital twins are expected to play a central role in autonomous industrial systems capable of self-monitoring, self-diagnosis, and self-optimization. This innovation represents a significant step toward the future of intelligent and sustainable industry.



CONCLUSION

AI-Powered Digital Twin Factories demonstrate how artificial intelligence and real-time simulation technologies can revolutionize industrial operations. By creating virtual representations of physical systems, organizations can improve efficiency, reduce costs, enhance reliability, and make smarter decisions. As adoption continues to grow, digital twins are set to become a cornerstone of next-generation smart manufacturing.



STAFF EDITORS

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Gimna Gimmy