

# One Week STTP on

## “AI and ROS for Robotics: Theory and Practice – 3<sup>rd</sup> Edition”

10-14 June 2024

Physical Mode



Organized by

Centre for AI, IoT, and Robotics

Department of Mechanical Engineering

Indian Institute of Information Technology, Design and Manufacturing, Kancheepuram, Chennai – 600127

### Key Facilitators



Prof. Sreekumar M  
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Dr. Badri Narayana Patro  
Microsoft India



Dr. Radhe Shyam Sharma  
IIT Mandi

### ABOUT THE INSTITUTE

Indian Institute of Information Technology, Design and Manufacturing, Kancheepuram (IIITDM Kancheepuram) is an Institute of National Importance established in 2007 by the Ministry of Education, Government of India, to pursue design and manufacturing-oriented engineering education and research and to promote competitive advantage of Indian products in global markets. The institute is presently offering various B.Tech programs in Computer Science and Engg., Electronics and Communication Engg., Mechanical Engg., and Smart Manufacturing, M.Tech & DD programs, and inter-disciplinary Ph.D programs in core and applied areas of engineering. In addition, a new M.Tech program in “AI and Robotics” is launched and will be offered from AY 2024-25.

### ABOUT THE CENTRE

The *Centre for AI, IoT, and Robotics* was established by the Institute and inaugurated by the Hon’ble Finance Minister of India, Smt. Nirmala Sitharaman on 10<sup>th</sup> Sep. 2022. The vision of this interdisciplinary Centre is to enhance the skill sets of researchers, engineers, students and faculties in AI, Robotics & Automation, IoT, and allied areas. The Centre supports various GoI schemes such as Skill India, Make in India, Digital India, Start-up India, Smart City Scheme, and NEP2020.

### ABOUT THE STTP

The curricula of various engineering programs at many universities in India are being updated to meet the challenging demands of industry and society, especially in emerging areas such as Robotics, Drones, AI, Data science, etc. To meet such demands, the faculties/researchers have to continuously upgrade their skills and knowledge which would ultimately support the students to learn and nurture a productive culture. Hence, this STTP aims to upskill the knowledge required to learn, understand, and teach AI, ROS, and Machine Vision techniques suitable for robotic applications.

\* > Applicants are requested to pay the registration fee using <https://www.onlinesbi.sbi/sbicollect/icollecthome.htm> [Search by “IIITDM” > Click on “IIITDM -EDUCATIONAL EVENTS” > Payment Category “AI and ROS”] and please pay as per the category. Then, submit the online registration form along with payment proof using <https://forms.gle/vqXhwrppJkvDa44A>.

> Registration fee includes a registration kit, lunch and refreshments on all five days, special dinner on one day, and participation certificates (scanned copy by email and hard copy by speed post).

> For further updates, please visit [www.iiitdm.ac.in](http://www.iiitdm.ac.in)

> Student hostel facilities could be provided on demand, subject to availability and on payment basis.

### TOPICS TO BE COVERED (Tentative)

- ❖ History and Basics of AI/ML
- ❖ AI for Robotics
- ❖ Robot Kinematics & Differential Motion
- ❖ Pattern Recognition
- ❖ Image Processing & Machine Vision
- ❖ Computer Vision for Robot Learning
- ❖ ROS - Theory & Practice
- ❖ Robot Programming with ROS
- ❖ Robot Integrated Image Acquisition
- ❖ AI for Autonomous Vehicle
- ❖ Vision Aided Unmanned Aerial Vehicles (UAVs)
- ❖ Spectral Transformer for Computer Vision
- ❖ Application of AI/ML in 6G
- ❖ Demonstration by XTerra Robotics Pvt. Ltd.
- ❖ Yoga
- ❖ NEP2020

### REGISTRATION FEE \*

Category	Amount (Rs.) #
a) Students & Full time Ph.D. Scholars	4,000
b) Faculty / Academic Staff	6,000
c) Participants from Industry/R&D Organization	10,000

# GST 18 % Extra

### WHO CAN ATTEND

- > Faculties from technical institutions
- > Research scholars / PG & UG students
- > Scientists/Professionals from R&D institutions/industries

### IMPORTANT DATES

Payment of Fee/Registration (Online) **31/05/2024 (Final)**

Begin - End : 01/04/2024 - ~~15/05/2024~~



Payment  
Link



Registration  
Form

Contact: Prof M. Sreekumar (Program Coordinator), Department of Mechanical Engg.

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