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TiHAN, IIT HYDERABAD
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5 DAY SKILL DEVELOPMENT PROGRAM ON
"INDUSTRIAL APPLICATIONS OF UNMANNED GROUND ROVERS"

ORGANIZED BY
SCHOOL OF COMPUTER SCIENCE ENGINEERING AND INFORMATION SYSTEMS
VELLORE INSTITUTE OF TECHNOLOGY, VELLORE, INDIA

About the Skill Development Program:

Unmanned Ground Rovers (UGRs) are mobile robots that are designed to operate autonomously or remotely without the need for human intervention. These UGRs have found numerous industrial applications due to their ability to operate in challenging environments and carry out tasks that are difficult or dangerous for humans. The industrial applications of UGRs include agriculture (seeding, planting, and harvesting), mining (mapping underground tunnels, monitoring the stability of mines, and carrying out inspections in hazardous areas), manufacturing (transporting materials and products, inspecting equipment), search & rescue (explore disaster sites and locate survivors), military (reconnaissance and surveillance missions, explosive ordnance disposal), etc., UGRs comprise several building blocks or components that work together to enable mobility and control, which includes chassis, power systems, sensors, control systems (brains of the UGV), actuators (to move around and perform tasks), communication systems, and navigation system. This Skill development program will give insights to the participants about building typical UGRs.

COURSE DETAILS

Module 1: Introduction to Unmanned Ground Rovers

Introduction to Unmanned Ground Rovers (UGR); Industrial applications; Building blocks of UGR.

Module 2: Building UGR

Assembly- Chassis - Motors- Motor drivers- Electronic speed controllers; Integration of onboard computing platforms; Demos; Hands-on.

Module 3: Sensors for UGR

Interfacing cameras and sensors- Adjustable sensing platforms- WiFi/bluetooth connectivity; Demos; Hands-on.

Module 4: Role of AI in UGR development

Introduction to AI/ML; Computer vision applications; Datasets; CNN models; Remote operations of UGR; Demos; Hands-on; Ideation.

Module 5: Case studies- Industry applications

Inspections in hazardous zones; Agriculture applications- Plant disease detection; Garden monitoring; Demos; Hands-on; Ideation.

Registration Fee: Rs. 1,200 + 18 % GST
For more details: https://vit.ac.in/tihan-sdp/

Who can participate?
-> Students from engineering/science courses
-> Students from polytechnic colleges
-> Working professionals

For any queries, contact:
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Dates:
26.11.2023 (Sunday):   Module 1
03.12.2023 (Sunday):   Module 2
10.12.2023 (Sunday):   Module 3
16.12.2023 (Saturday): Module 4
17.12.2023 (Sunday):   Module 5

Time: 9.00 AM to 5.00 PM
Venue: VIT Vellore, India.

Resource Persons:

Dr. R. Viswanathan
      ICAR- IISR, Lucknow
Dr. Yong Wang
      Binghamton University, USA.
Dr. Kedarisetty Siddhardha
      Technion-Israel Institute of Technology, Haifa, Isreal.
Dr. Rahul Kala
      ABV-IIITM Gwalior
Dr. Rahul Katarya
      Delhi Technological University, Delhi
Dr. Suresh Chavhan
      IIIT Raichur
Dr. Raja Das
      VIT Vellore
Dr. R. Ramakrishnan
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