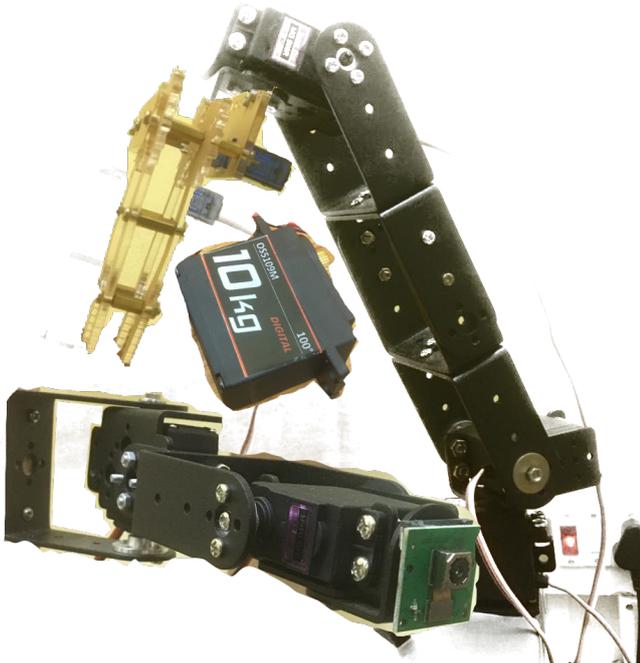


IoE Workshop on Practical Robotics

Committee Room (EB-100), SCIS Annex

University of Hyderabad

December 19-23, 2022



About the Workshop

Autonomous robots are gaining more attention day by day. Such agents can become very complex and range from simple robotic arms which can pick up arbitrary objects to humanoid robots which can perform acrobatic stunts. School of Computer Science under the aegis of Institute of Eminence Scheme as part of the project 'An Automated System for tracking Physical Characteristic Changes in Tomatos' is excited to conduct a workshop on Practical Robotics.

The workshop will be entirely **HANDS ON** using DIY inexpensive parts and will aim to impart skills for students to begin to work independently on robotics projects.

Objectives:

1. To familiarize with the systems and interface with them for building practical robotics projects
2. To understand hardware including motors and cameras and controlling them via software
3. To model the robots in a physics simulator

REQUIREMENTS FROM PARTICIPANTS:

1. Must be familiar with basics of Linux based systems and basic programming in python.
2. Must be present in person for the workshop as it's entirely practical.
3. Must bring their own laptops and chargers. Rest of the hardware will be provided on site.

IMPORTANT: Due to limited hardware availability, the participants will be divided into groups and there can only be a limited number of participants per group. The entire group will get a set of hardware and will be required to work together. **NOT ALL APPLICANTS CAN BE ACCOMMODATED**

VENUE

The Workshop will take place at SCIS Annexure (New Building), Committee Room (EB-100) from Dec 19-23.

FEES

The Workshop is **FREE** for all participants, however the number of participants will be limited due to hardware availability.

Eligibility

The Workshop is **OPEN** for all students of following courses of the University of Hyderabad who meet the prerequisites:

- SCIS, UOH: MTech 1st year, IMTech 3-4 year
- CASEST, SoP, UoH: MTech 1st year.

Prerequisites

1. Fundamental understanding of Linux based systems
2. Working knowledge of Python
3. Basic Programming skills

Tentative Schedule

1. **Dec 19:** Systems for Robotics (Raspberry Pi and Nvidia Jetson)
2. **Dec 20:** Servos and Cameras
3. **Dec 21:** Modeling and Simulation (with MuJoCo)
4. **Dec 22:** Real World Modeling (2 DOF Robot Arm with camera)
5. **Dec 23:** Small Project

ORGANIZERS

Vineet Nair, Professor, SCIS UoH
Akshay Badola, Project Staff, SCIS UoH

REGISTRATION Interested and eligible participants can register via link:

<https://forms.gle/yxDyyGUwxvqrKAnNA>

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