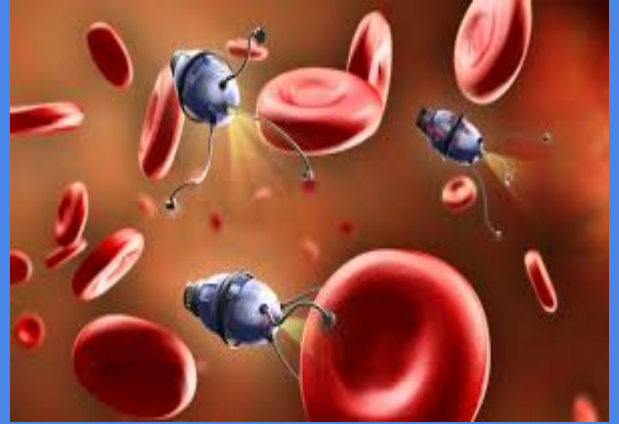
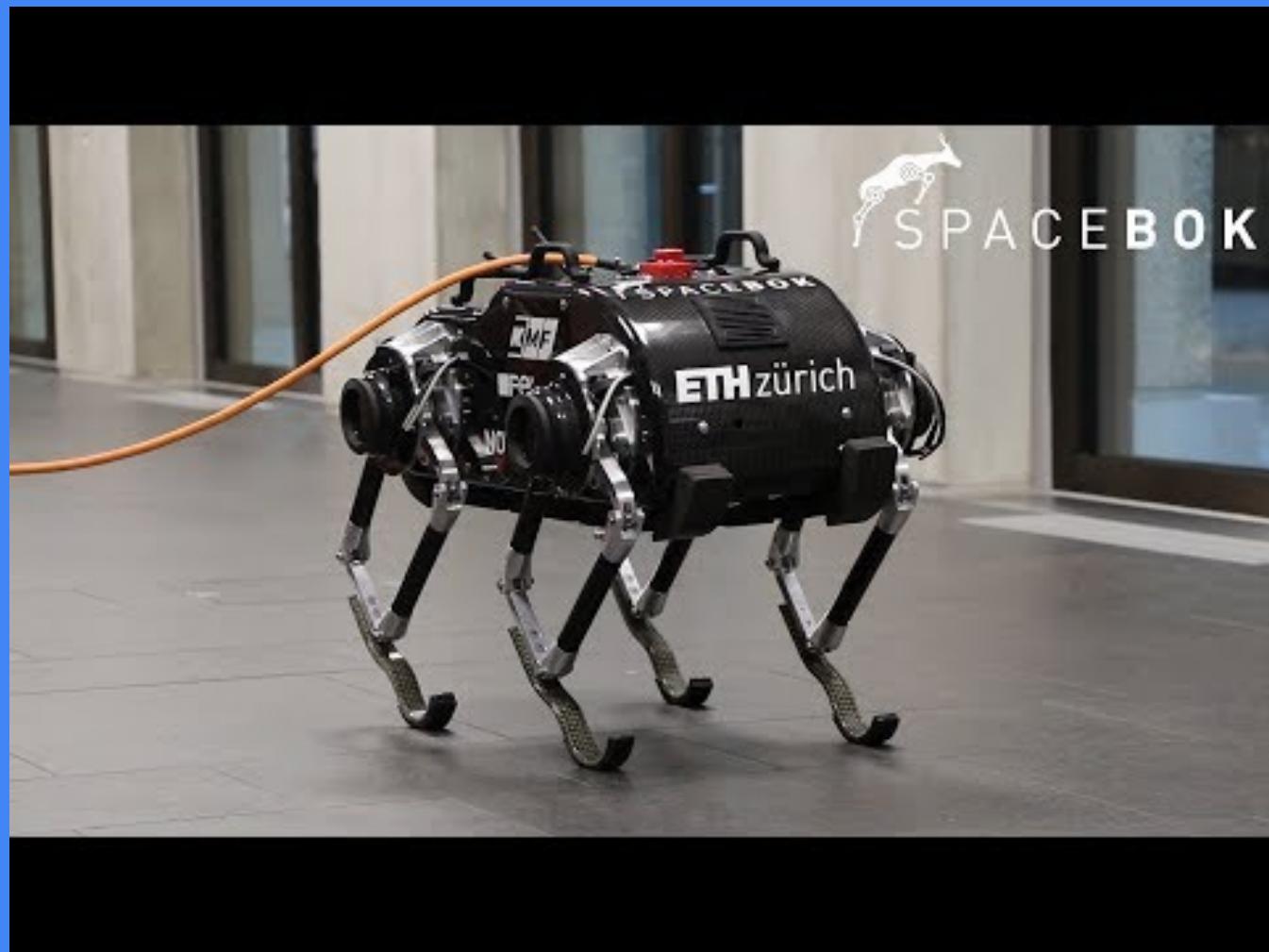


Robotics Insight - II

Introductory Session





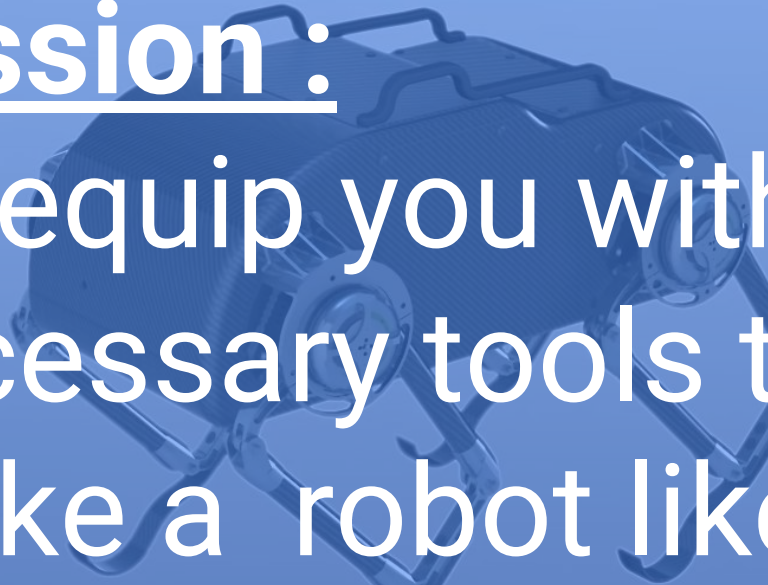


Vision :

To elucidate upon
adventing robotic
technologies.

Mission :

To equip you with necessary tools to make a robot like this, from scratch.

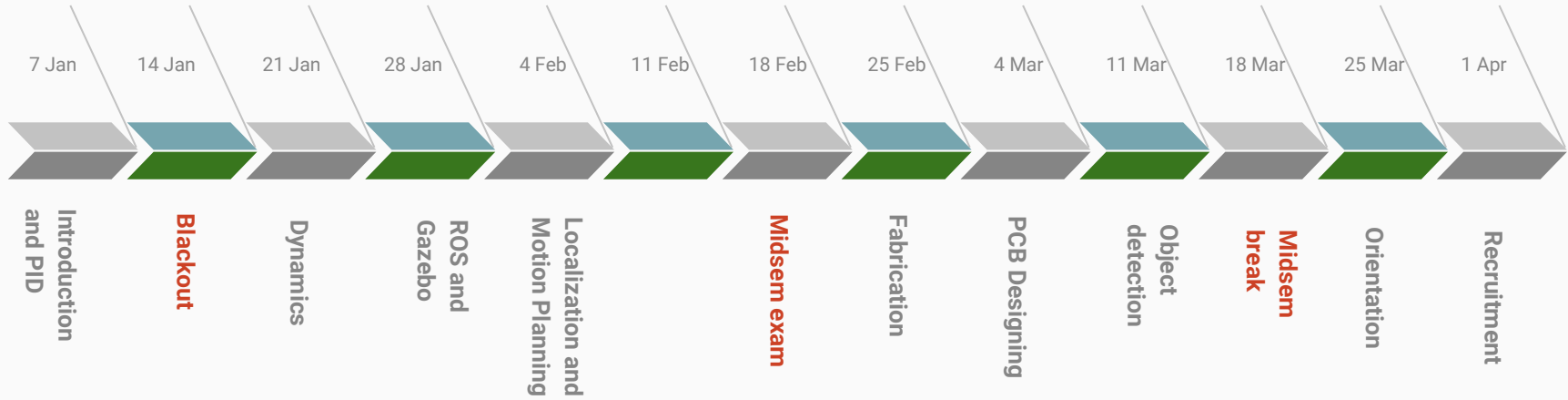


A close-up photograph of a person's hand, wearing a dark sleeve, using a small tool to work on a light-colored surface. The background is blurred, showing some indistinct shapes and colors. The text 'Robotics Insight-II' is overlaid in white on the left side of the image.

Robotics Insight-II

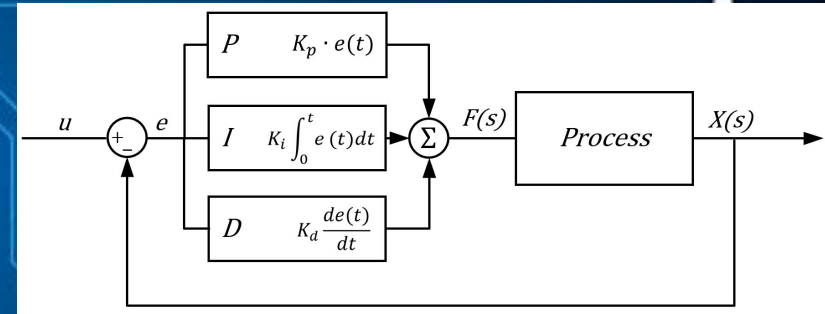
- Targeted Approach
- Application Oriented Learning

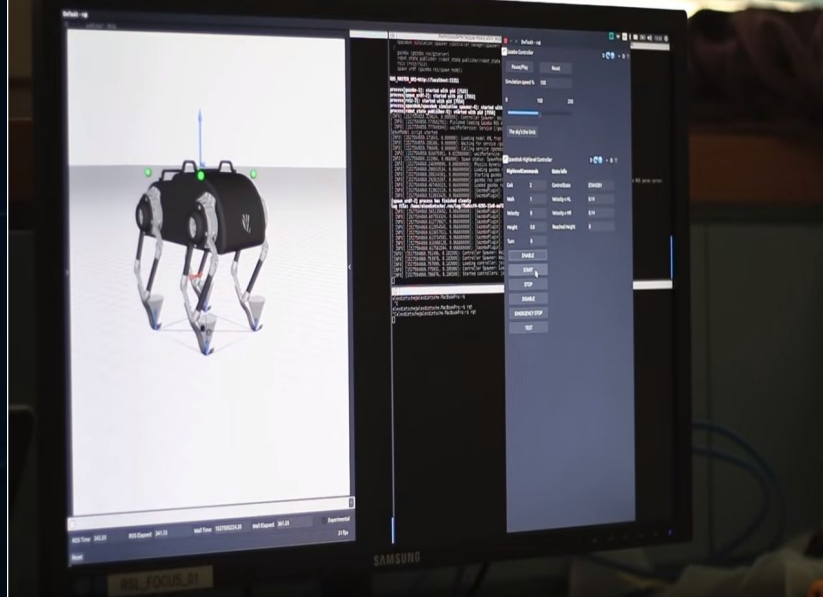
Timeline for Lectures



Lecture 1: PID

This lecture will introduce you to controls and basic feedback control system using PID.





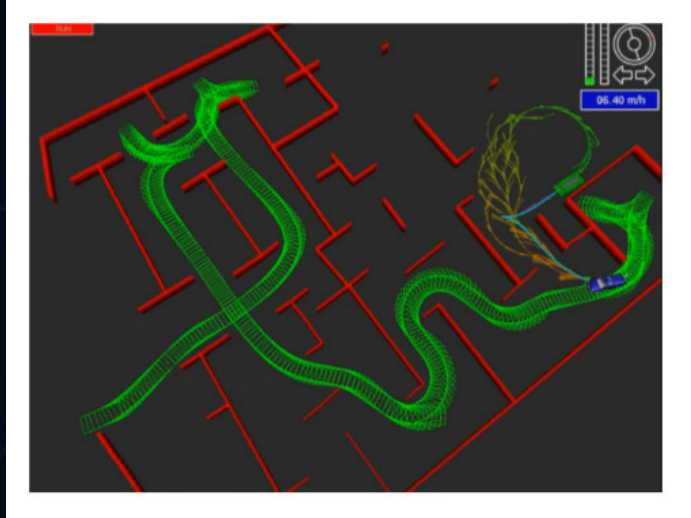
Lecture 2: Dynamics

Explain the basics of dynamics and the use of MATLAB

Lecture 3: ROS and Gazebo

Install ROS and Gazebo in devices and explain the basics to get started





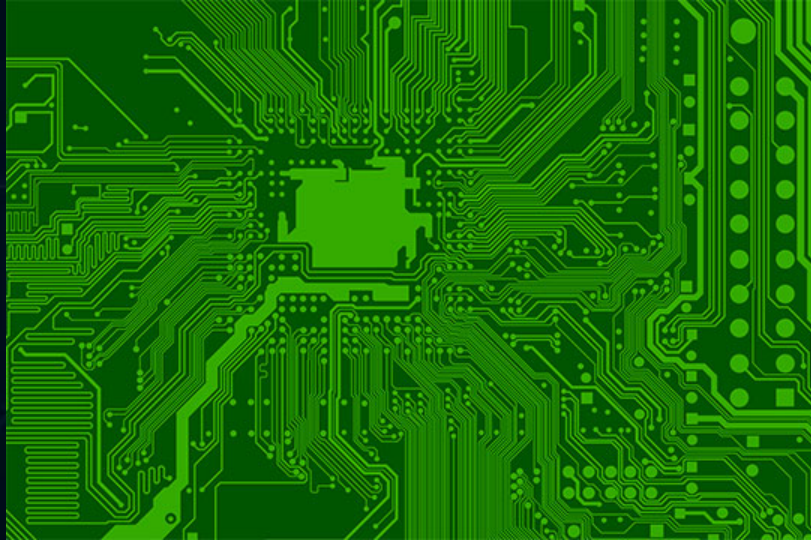
Lecture 4: Localization and Motion Planning

Popular localization algorithms and path planning algorithms

Lecture 5: Fabrication

Division of assemblies and
CAD modelling



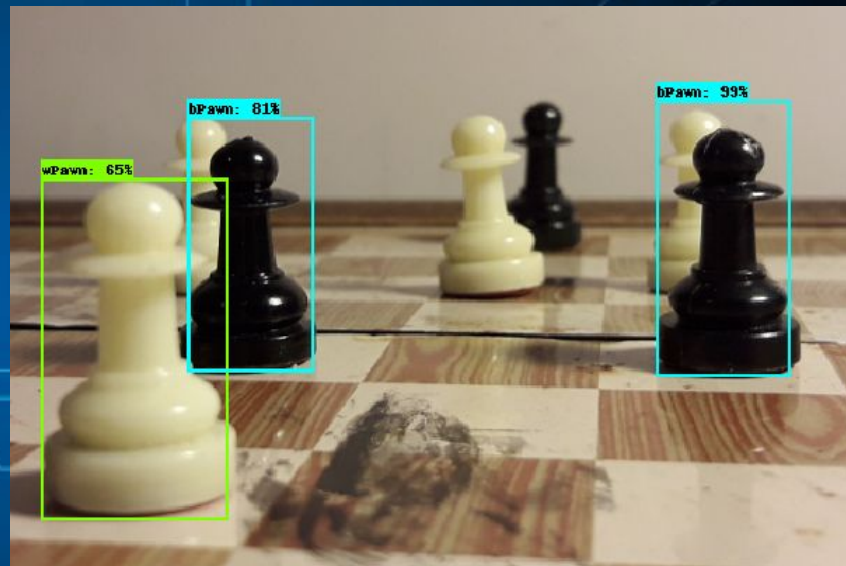


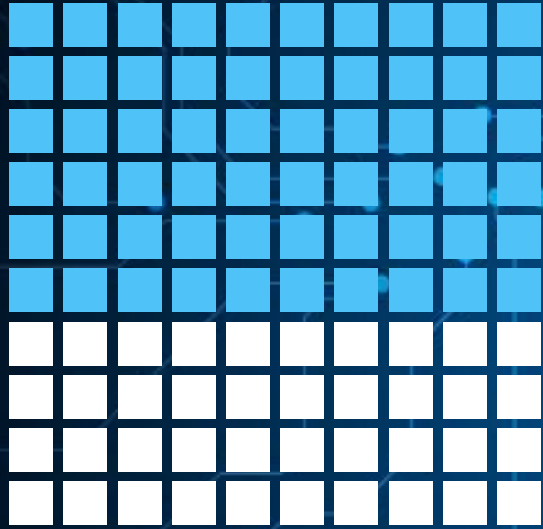
Lecture 6: PCB Designing

Introduction to electrical
circuits, PCB designing
and simulation

Lecture 7: Object Detection

Machine Learning and CNN basics, usage of TensorFlow libraries for object detection





Lecture 8: Orientation for Summer

Learned concepts in the
background of the problem
statement



Mini-Problems



Torque Calculation Algorithms

Application of
Newton-Euler method
to calculate torque

Path planning simulation

Using ROS packages to
use popular path
planning algorithms





Basic design of robot

Design a primary
CAD model of a robot

Buck converter design and simulation

Use KiCAD and LTSpice
to design a buck
converter





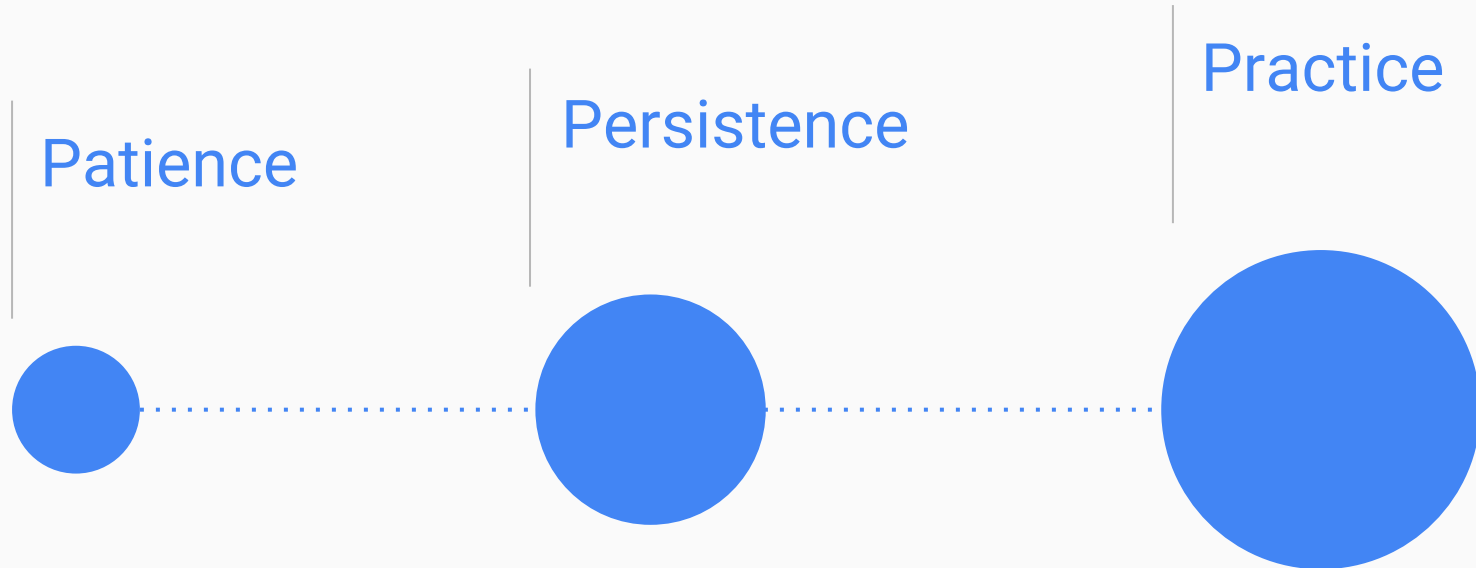
Object detection

Using TensorFlow to
build an object
detection model

Recruitment Process

- ❖ Continual Assessment via Assignments etc.
- ❖ Follow-up Recruitment Test : Based on lectures.
 - Part 1 : General Aptitude
 - Part 2 : Specialization
- ❖ The Specialization Section would be based on the content based on lectures , but not limited to it.
- ❖ To ease out the burden , you need to choose any attempt any two from the given choices in Part 2. Preferably the sections you are most confident about :)
- ❖ Last but not the least : “ Enthusiasm “

The Rule of 3-P's







Contact Us

students.iitk.ac.in

Robotics Club IITK BLOG PROJECTS RESOURCES **TEAM** FACULTY ALUMNI EVENTS

Coordinators

 I-305/Hall-5 7318017610 ayushsj@iitk.ac.in Ayush Singh	 B201/GHT 9456041682 maneetka@iitk.ac.in Maneet Kaur	 250/ Hall-3 7275934699 manasrwt@iitk.ac.in Manas Rawat	 A114/ Hall-5 7275991974 msuraj@iitk.ac.in Suraj Mishra
---	--	--	---

<http://students.iitk.ac.in/roboclub/team/>