Koustubh

College Park, Maryland, USA

+1(240)-481-5720 koustubh1012@gmail.com github.com/koustubh1012 linkedin.com/in/koustubh-j/

Education

University of Maryland, College-Park Expected May 2025
Master of Engineering in Robotics *GPA: 3.8/4.0*
Courses: Object-Oriented Programming, Planning, Perception, Controls Systems, Manufacturing and Automation, Software Development, Machine Learning, Deep Learning, Unmanned Aerial Vehicles(UAVs)

Institute of Engineering and Technology, Lucknow (Affiliated to AKTU, Lucknow) August 2021
Bachelor of Technology in Electrical Engineering *GPA: 8.0/10.0*
Courses: Control Systems, Embedded Systems, Power Systems, Electrical Machines, Engineering Mathematics

Experience

Maryland Applied Graduate Engineering, UMD College Park | *Grading Assistant* Aug. 2024 – Present
- Evaluating assignments and projects for ENPM662: Introduction to Robot Modeling and ENPM661: Planning for Autonomous Robots.
- Developed structured grading rubrics ensuring fair evaluation and constructive feedback for student learning.

Tata Consultancy Services | *Assistant Systems Engineer* Oct. 2021 – Aug. 2023
- Managed the e-commerce platform of a fashion brand using Salesforce Commerce Cloud and Splunk monitoring, improving uptime and performance.
- Reduced MTTR by 65% through proactive issue resolution and automated monitoring strategies.
- Recognized with "Best Team Award" for outstanding performance and contribution to the project.

Indian Institute of Technology, Bombay | *Research Intern* May 2020 – June 2020
- Developed educational content for Mobile Robotics MOOCs, impacting over 500 students globally by integrating practical simulations and coding exercises in technologies such as ROS, SLAM and path planning.
- Enhanced organizational outreach by actively contacting South African and Namibian university students to promote participation in the eYantra Robotics Competition and designing the eYantra yearbook.

Projects

Early Detection of Autism in children using AI | *Neural Networks, TensorFlow, Keras*
- Developed a neural network to detect autism in children using eye-tracking data by analyzing eye movement patterns during visual stimuli aiming to improve early diagnosis and intervention.
- Achieved a significant improvement over the baseline accuracy of 79.14 %, reaching over 87.8% accuracy in classifying autism using eye-tracking data, with a recall of 89.89 % .

Autonomous TurtleBot3 Navigation using Visual Cues | *ROS2, Python, C++, Git*
- Developed and deployed a ROS2 package for autonomous navigation, incorporating horizon detection and optical flow for enhanced perception, along with YOLOv8-based stop sign detection.
- Successfully implemented the system in Gazebo simulation and TurtleBot3 hardware, demonstrating adaptive path tracking, real-time obstacle avoidance, and automated stop sign recognition in a controlled testing arena.

Survey and Rescue Drone | *Robot Operating System, Python, C++, Git, Unix Shell*
- Programmed a mini quad-copter with advanced PID controls for stable flight dynamics under varied environmental conditions.
- Implemented machine vision techniques for real-time object and marker detection, increasing the operational capability of the drone in simulated search and rescue missions in an arena.

Skills

Languages: C++, Python, Bash, MATLAB
Frameworks: Robot Operating System(ROS), Gazebo, SLAM, Navigation, OpenCV, Motion Planning Framework(MoveIt), PyTorch, TensorFlow, Keras
Tools: Git/GitHub, Unix Shell, Solidworks, Salesforce Commerce Cloud, Splunk Cloud Platform