

Udit Ekansh

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<https://github.com/Udit176>

Summary

- Master's in Autonomy Student at Purdue specializing in Autonomous and Connected Systems.
- Seeking a summer 2025 internship as a robotics engineer, with a keen interest in solving real-world motion planning, navigation, and control problems.

Education

Purdue University, MS in Autonomy

Aug 2024 – Dec 2025

- GPA: 3.7/4.0
- **Coursework:** ECE570- Artificial Intelligence, ME597- Autonomous Systems, ECE595- Reinforcement Learning
- **Projects:**
 - Autonomous Mapping and Navigation using TurtleBot3.
 - Comparative Evaluation of Offline Reinforcement Learning Algorithms for grid-world Navigation tasks.

MIT Art, Design, and Technology University, India - B. Tech in Mechatronics and Automation Engineering

Jul 2019 – May 2023

- **GPA:** 8.2/10 (97th Percentile)
- **Capstone:** Developed a ROS-based bipedal robot.

Experience

Project Research Assistant, Indian Institute of Technology, Bombay – India

Jul 2023 – July 2024

- Extended 2D invariant-set based integrated planning and control approach to 3D, achieving safe autonomous navigation on RexROV platform, validated in Gazebo.
- Integrated open-source sonar sensor from Project DAVE onto ECA-A9 AUV, enabling the creation of local octomaps for enhanced underwater navigation.
- Conducted comprehensive literature review on path planning, trajectory tracking, and sonar-based mapping algorithms for autonomous underwater vehicles, contributing to project foundation and problem formulation.

Research Intern, TATA Power – Bombay, India

Mar 2023 – June 2023

- Conducted extensive literature survey on robotics applications in electric utilities, resulting in actionable integration plans for Tata Power's operations.
- Contributed to early-stage initiatives for developing novel indices to measure internal performance, quantifying the gap between Tata Power's processes and state-of-the-art technologies.

Volunteering Experience

Cultural Exchange and Business Development Manager, AIESEC, Pune, India

Feb 2020 – Jan 2021

- Facilitated global internships by providing students with comprehensive information about summer internship opportunities abroad.
- Struck sponsorship and ticketing deals with local businesses for AIESEC's outreach events, ensuring all deliverables were met.
- Oversaw both virtual and in-person events, managing logistics and maintaining relationships with local business partners.

Other Experience

Student Security Patroller (Part-Time), Purdue University Police Department – USA

Sep 2024 – Present

- Ensured campus safety through patrols, building checks, safe-walks for students during nighttime campus travel.
- Event security for university functions such as football and basketball games.

Certifications and Skills

- **Robotics and Simulation:** ROS/ROS2, Gazebo, Rviz, MoveIt Motion Planning Framework, Simulink
- **Programming Languages:** Python, MATLAB/Octave, C
- **Data Science and Machine Learning:** PyTorch, numpy, pandas
- **Software Development and Utilities:** Linux/Unix, LaTeX, Microsoft Excel, git
- **Certifications:** Machine Learning - Stanford University (Coursera), MATLAB Onramp - MathWorks, What is Data Science? - IBM (Coursera)