

Prajyot Jadhav

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EDUCATION

Visvesvaraya National Institute of Technology

Bachelor of Technology in Electronics and Communication Engineering, GPA: 8.72/10.0

Nagpur, India

July 2020 – May 2024

PUBLICATIONS

B. Sharma, **P. Jadhav**, P. Paul, K. M. Krishna and A. K. Singh, “MonoMPC: Monocular Vision Based Navigation With Learned Collision Model and Risk-Aware Model Predictive Control,” in *IEEE Robotics and Automation Letters*, vol. 11, no. 2, pp. 1330-1337, Feb. 2026, doi: 10.1109/LRA.2025.3641112.

V. Jaiton, **P. D. Jadhav**, K. Rothomphiwat, T. Phetpoon, K. Tarapongniwat and P. Manoonpong, “An Integrated Adaptive System for On-Pipe Landing and Adherence of Autonomous Inspection Drones,” *2025 IEEE/SICE International Symposium on System Integration (SII)*, Munich, Germany, 2025, pp. 163-164, doi: 10.1109/SII59315.2025.10871060.

EXPERIENCE

Autonomous and Kooperative Systems Lab, University of Tartu

Sept. 2024 – Present

Research Engineer

Tartu, Estonia

- Designed and implemented risk-aware motion planning frameworks for monocular-vision-based navigation, including collection of real-world training data and hardware deployment for experimental validation.
- Contributed to Horizon EU-funded XSCAVE project, adapting MPPI controllers for non-holonomic ground robot navigation in uneven terrain, combining learning-based initialization with optimization for faster convergence.
- Served as Teaching Assistant for reactive planning and optimization courses, conducting labs, grading assignments, and resolving student doubts.

Google Summer of Code – JdeRobot

April 2024 – Present

Open Source Developer and Mentor

Remote | Madrid, Spain

- Ported Robotics Academy Docker Image from Gazebo Classic to Gazebo Harmonic to ensure long-term compatibility and support.
- Completed 4 additional Gazebo Classic-to-Harmonic exercise migrations beyond GSoC scope.
- Mentored 2 GSoC contributors (2025) on robotics simulation, achieving 100 % successful project completion.

Bio-Inspired Robotics and Neural Engineering Lab, VISTEC

May 2023 – July 2023

Research Intern

Rayong, Thailand

- Developed a dual adaptation framework with nested PID-based adaptive controller and soft landing gear for autonomous quadrotor landing on cylindrical pipes.
- Validated the approach in real-world environments after successful simulation results, demonstrating reliable performance on physical platforms.

IvLabs, VNIT

July 2021 – May 2024

Undergraduate Student Researcher

Nagpur, India

- Studied the fundamentals of deep learning (including CNNs, autoencoders) and implemented them using PyTorch.
- Modeled and implemented PID and LQR controllers for systems such as cart-pole and quadrotors, and evaluated their performance.

SELECTED PROJECTS

Optimization Methods for MPC-Based Mobile Robot Navigation

[GitHub](#)

- Implemented sampling- and gradient-based optimizers (including CEM, NLS, random search and Nesterov’s accelerated gradient) within an MPC framework for real-time autonomous navigation.

Control Barrier Function for safe Quadrotor Navigation

[GitHub](#)

- Developed a CBF-QP controller for quadrotor navigation, enforcing safety constraints based on obstacle distance functions and solving the QP in real time for reliable collision avoidance.

TECHNICAL SKILLS

Languages: Python, Matlab, C/C++, SQL, HTML

Developer Tools: Linux, ROS/ROS2, Git, Docker, CMake, Bash

Libraries: JAX, Equinox, PyTorch, Keras, OpenCV, pandas

Simulation Tools: Gazebo, PyBullet, Flightmare, Aerostack2