Pranav Kolekar

Portfolio | pranavkolekar13@gmail.com | LinkedIn | GitHub | ROS Discourse |

Education

M.E.S Wadia College of Engineering — Pune, Maharashtra
Bachelor of Electronics and Telecommunications : First Class. — *Dec 2021 - May 2025*

S. M Choksey High School and Junior College — Pune, Maharashtra
Higher Secondary Education(12th) : 81.00% — *Jun 2020 - Feb 2021*

S. M Choksey High School and Junior College — Pune, Maharashtra
High School Education(10th) : 85.20% — *Jun 2018 - Mar 2019*

Experience

Robotics Software Engineer | ***ROS, Nav2, Autoware, Sensor Fusion, Rtabmap*** — June 2025 – Present
Nxtwave Destruptive Technologies — *Hyderabad*

- Developed autonomous navigation on Jetson Nano and F1TENTH using ROS2, RealSense cameras, and Nav2 with Pure Pursuit for smooth path tracking.
- Combined data from IMU, odometry, and stereo depth sensors for better localization and mapping.
- Proficient in Autoware setup, with experience in ROS2 simulations and strong grasp of its architecture.
- Experienced in creating vector maps with Tier IV's Builder and processing point clouds in CloudCompare through filtering, subsampling, and merging to generate optimized datasets.

Junior Robotics Developer | ***Python, OpenCV, Git, Automation*** — Feb 2025 – Present
Ondroid — *Finland*

- Developing Python scripts for automated assignment verification using OpenCV and maintaining consistency using Git.
- Integrated Pytest into the backend to improve testing reliability and streamline deployments.

Robotics Lead, Robocon 2024 | ***ROS2, Gazebo, RViz, URDF*** — Feb 2024 – July 2024
MES Wadia College of Engineering — *Pune*

- Led R&D and integrated advanced control systems in Robot 1, boosting efficiency.
- Implemented ROS2 in Robot 2 with URDFs, encoders, LiDAR, IMU, and cameras, followed by Gazebo simulations.

Electronics Intern | ***Arduino Cloud,Python*** — Mar 2024 - May 2024
Canspirit AI — *Pune*

- Integrated devices with Arduino Cloud for data collection.Developed cross-platform data logging systems, optimizing storage and retrieval processes.Implemented IoT solutions for hardware-software integration.

Electronics and Embedded Systems Developer | ***Product Development*** — Oct 2023 - Jan 2024
Indkarta LLP — *Pune*

- Developed two embedded systems for medication processing in clinics and labs and designed custom PCB's.

Open-Source Contributions

Bug Fix- Gazebosim | ***Gazebo Harmonic*** — Merged

- Identified and Fixed a bug where far lasers appear to hit the floor in Gazebo Harmonic `gz-sensors`(Issue #509) affecting LiDAR sensor integration in simulation.

Feature Implementation - Nav2 | ***Navigation2*** — In-progress

- Developed the nav2_toolkit package with QoL utilities for ROS2 Navigation, including pose persistence with configurable parameters and relocalization support.

Projects

Autonomous Exploration and Mapping in Uncharted Terrain | ***Mapping,Navigation*** — Aug 2024 - Present

- Built a robotic tank capable of autonomously exploring and navigating unknown terrains.
- Developed custom ROS2 packages for 3D environment mapping using 2D LiDAR and IMU data.

Smart Library Management System | ***Python,MicroPython,HTML,RaspberryPi Pico W*** — Jan 2024 - Apr 2024

- Developed an RFID-based system monitoring of books, loans, and user data accessed through a web server.

Skills

Programming Languages: Python, C/C++, MicroPython, URDF.

Frameworks & Tools: ROS2, Nav2, OpenCV, SLAM, KiCad, Fusion 360, RTABMap, Cartographer, GMapping.

Simulation & Visualization: Gazebo, RViz, Foxglove Studio.

Hardware: Arduino/RPi Pico, Raspberry Pi, NVIDIA Jetson Nano, Orion Nano.