

EXPERIENCE

SOFTWARE ENGINEER | KPIT INDIA

Jan 2023 - Present

- Contributed to **Adaptive AUTOSAR**, implementing IPC stack within communication management team.
- Leveraged semaphores and shared memory to replace legacy APIs, reducing communication time by 40%.
- Implemented a tool to simplify functional testing, which is widely adopted by other teams.
- Worked on C++, Python, TCP/IP, UDP, QNX RTOS, R-Car S4/H3 boards, QEMU emulator.

Achievements: Received multiple **High Flyer** awards for leading and early delivering the testing tool.

EXECUTIVE ENGINEER | ELEKTROBIT INDIA

Jan 2022 - Dec 2022

- Developed a C++ code generator tool used by multiple **ADAS** platforms.
- Reduced developer overhead by automating GTest generation using Python.

Achievements: Received the **H1 Maverick Team Award** for optimizing tool performance.

DESIGN ENGINEER INTERN | DASSAULT SYSTÈMES

Feb 2021 - Aug 2021

- Designed a foldable helmet, achieving a 32% volume reduction compared to traditional designs.
- **Achievements:** Top 4 at **ConnectNext 2021** and secured full sponsorship to build the physical prototype.

OPEN-SOURCE

MEMBER | JDEROBOT

May 2021 - Present

- Participated in **Google Summer of Code 2021** as a student, webifying the existing ROS infrastructure.
- Mentored new contributors and maintained the drone section of RoboticsAcademy.
- Assisted in achieving hardware acceleration support to enhance framework performance.
- Worked on ROS, Gazebo, PX4, Python, Docker

Achievements: Presented my GSoC work at ROS World 2021 as Lightning Talk.

Achievements: Received scholarship by Open Robotics to attend ROSCon 2023 in Japan.

SKILLS

C++ Python CMake Bash ROS Gazebo Rviz OpenCV
Robot Localization Pose Estimation Kalman Filters Sensor Fusion SLAM Communication

PROJECTS

ROBOTICS CONSULTANT | Fiverr

2023

- Collaborated with multiple **startups** and small businesses to provide them with robotics solutions.
- Worked closely with cross-functional teams to ensure seamless integration of autonomous functionalities.
- Played a key role in the growth of a husbandry startup by leading the development of a cleaning robot.
- Designed and delivered a juice-dispensing robotic arm and provided a base to a food service startup.
- Worked with a drone-based startup to improve localization estimation in a non-GPS environment.

PARTICLE FILTERS | GitHub

2023

- Developed a ROS package to **fuse** LIDAR and odometry sensor data using particle filter for state estimation.
- Explored **Gaussian process** for improved state estimation and reduced computational power.

KALMAN FILTERS | Blog

2021

- Developed a ROS package - [awesome slam](#) for SLAM using Kalman filters.
- Utilized odometry and LiDAR sensor data for robot and obstacle **pose estimation**.
- Analyzed the performance using the KITTI dataset based on algorithmic complexity and execution time.

AI LEARNS TO PARK | Blog

2020

- Developed an AI-powered 3D simulation of a self-parking car.
- Established a communication link between the simulator and controller using a networking interface.
- Explored various **reinforcement learning** algorithms and trained multiple artificial neural network.

EDUCATION

Thapar Institute of Engineering & Technology, India | Bachelor's in Mechanical Engineering

2018 - 2022