(+91) 9051-902-862
arkajbasak1211@gmail.com

Arkajyoti Basak

iamarkaj
arkajyotibasak.codes

EXPERIENCE

Software Engineer | **KPIT India** **Jan 2023 - Present**
• Contributed to the COM team, and development of KPIT's in-house **Adaptive AUTOSAR** stack.
• Developed features using feature specification and AUTOSAR guidelines.
• Received **High Flyer Award** for leading the development and early delivery of the COM Test Manager.
• Experienced with feature validation on QNX RTOS, R-Car S4/H3 boards, and QEMU emulator.

Executive Engineer | **Elektrobit India** **Jan 2022 - Dec 2022**
• Worked on embedded code generation for **ADAS** platforms.
• Received **H1 Maverick Team Award** for improving tool performance by rewriting existing code.
• Automated GTests generation using scripts, to reduce developer overhead.

Design Engineer Intern | **Dassault Systèmes** **Feb 2021 - Aug 2021**
• Designed a helmet, resulting in a 32% reduction in volume compared to traditional designs.
• Ranked among **top 4** at LFDS' ConnectNext and secured full sponsorship to manufacture the prototype.

OPEN-SOURCE

Contributor | **JdeRobot** **May 2021 - Present**
• Participated in GSoC'21 as student and webified the existing ROS infrastructure, elevating the user experience.
• Transitioned to a **Mentor** role, oversaw drone section maintenance, and guided successive GSoC participants.
• Introduced multiple new exercises, and incorporated hardware acceleration support, for diverse configurations.

ACHIEVEMENTS

2022 Received scholarship by Open Robotics and attended ROSCon 2023 in Japan.
2021 Presented my GSoC work at ROS World 2021 as Lightning Talk.

SKILLS

Programming: C++, CMake, Python, Bash
Frameworks: ROS, OpenCV, PyTorch, TensorFlow
Simulation: Rviz, Gazebo, NVIDIA Isaac Sim, Unity
Interests: Robot Localization, Pose Estimation, Kalman Filters, Sensor Fusion, SLAM

PROJECTS

Particle Filters | **GitHub** **2023**
• Developed a ROS package to **fuse** LiDAR and odometry sensor data using particle filter for state estimation.
• Explored **Gaussian process** integration 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**