Kolkata, India
arkajbasak1211@gmail.com

Arkajyoti Basak

iamarkaj
arkajyotibasak.tech

EXPERIENCE

Elektrobit | **Software Engineer** **Jan 2022 - Present**

- Elektrobit is an automotive software company and developer of autonomous driving products.
- I work in the Continental-ADAS team where I developed a C++ code generator for ADAS platforms.
- Implemented unit/module tests and wrote scripts for automatic Google-Test generation.
- **Won the Maverick Team Award H1'2022** and attended EB-ADAS workshop in Germany.

Google Summer of Code | **Organization Mentor** **May 2021 - Present**

- JdeRobot is a non-profit open-source organization that develops robot programming tools.
- I was selected at GSoC 2021 to replace the existing infrastructure from ROS-based to web-based platform.
- The work done was **selected as Lightning Talk** at ROS World'21.
- **Won the ROS Diversity Scholarship** by Open Robotics to attend ROS Con'22 in Japan.
- Check out my blog for more details. Now, I guide and mentor students during their GSoC program.

Dassault Systèmes | **Design Engineer Intern** **Feb 2021 - Aug 2021**

- Led a team of five that designed, analyzed, and tested a foldable helmet, reducing the overall volume by 32%.
- Showcased our design at LFDS ConnectNext 2021 and **won 100% sponsorship** to build the physical prototype.

SKILLS

Programming: C, C++, Python, C#, Bash, CMake
AI/Robotics: OpenCV, PyTorch, TensorFlow, ROS, PX4-Autopilot, MAVROS
3D Software: Rviz, Gazebo, NVIDIA Isaac Sim, Unity3D, SolidWorks, Fusion 360, Ansys, PTC Creo, Blender
Concepts: Computer Vision, Localization, Pose Estimation, Kalman Filters, Sensor Fusion, SLAM

EDUCATION

Thapar Institute of Engineering & Technology, India | Bachelor in Mechanical Engineering **2018 - 2022**

PROJECTS

Freelance Projects at Upwork | Profile **2022**
Collaborated with 10+ startups and small businesses to provide them with robotics solutions. I have worked on object tracking, human following robot, setting up various simultaneous localization, and mapping pipelines.

SLAM using Turtlebot3 | Blog **2021**
Developed an open-source ROS package - awesome slam to implement SLAM using Kalman filters. Analyzed the performance using the KITTI dataset based on algorithmic complexity and execution time.

Proof of Concepts | Blog **2021**
Implemented PID controller, artificial potential field, 2D grid-based maximum coverage path planning algorithm to create line following, obstacle avoidance, etc. solutions for mobile robots.

AI Learns to Park | Blog **2020**
Created a 3D parking-lot game in Unity. I have used the socket networking interface to set up data communication between the simulator and a Python-based controller. I experimented with various reinforcement learning algorithms to train an artificial neural network for self-parking.

Split And Rephrase | Blog **2020**
Built an NLP pipeline for sentence simplification that is deployed in production at atalki.com. Trained various models that utilized Stanford Dependency Parser and T5-Transformer to achieve optimal generalizability.