Kolkata, India
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Arkajyoti Basak

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EXPERIENCE

• Elektrobit, India
Executive Engineer **Jan 2022-Present**

Working in the ADAS Software team.

• Dassault Systèmes, India
Engineering Design, Internship **Feb 2021-Aug 2021**

Worked with the R&D team. Designed a foldable motorcycle helmet and performed static structural analysis. Showcased our product at the Industry-Academia Connect program. Won funding by Dassault Systèmes for the physical prototype. Softwares - 3DEXPERIENCE, SolidWorks, Ansys

• Atalki
Machine Learning, Freelance **Feb 2021-Mar 2021**

Built an NLP pipeline for sentence simplification. Trained various models that utilized Stanford Dependency Parser and T5-Transformer to achieve optimal generalization. Language/Tools - Python, PyTorch, NLTK, TF-IDF *Blog*

OPEN SOURCE

• Robotics Lab - Universidad Rey Juan Carlos, Spain
Software Developer, Part-time **Sep 2021-Present**

Working Group member of *jderobot/drones* and *RoboticsAcademy*. Language/Tools - Python, PX4, MAVLink, ROS, Gazebo

• Google Summer of Code 2021
JdeRobot **May 2021-Aug 2021**

Worked with the drones team. Built the Robotics Academy Docker Image for ROS-Noetic. Extended the drone exercises from ROS node to web-based template. Language/Tools - Python, C++, ROS, OpenCV, Html/Css/Js, Docker *Blog*

PERSONAL PROJECTS

• SLAM using Turtlebot3 **2021**

A small open-source project *awesome slam* to implement SLAM based on EKF & UKF using Turtlebot3. Built a feature detection pipeline which includes points clustering, circle fitting, and circle classification. Implemented using C++, ROS, Gazebo.

• Robotics Algorithms **2021**

Proof of concepts for local navigation algorithm with Artificial Potential Field, coverage path planning algorithm for autonomous vacuum cleaner, PID controller on a line following robot. *Blog*

• AI Learns to Park **2020**

Created a 3D parking-lot game in Unity simulator. Worked on setting up the communication networks using socket networking interface. Trained an ANN using Rainbow-DQN algorithm for the agent to self-park. Implemented using Python, and C# *Blog*

EDUCATION

Thapar Institute of Engineering & Technology **Patiala, India**
B.E. in Mechanical Engineering **Jun 2018-Jun 2022 (expected)**
• Awarded the first prize in the final-year Capstone Project.

SKILLS

- **Programming languages** : C++, Python, Bash
- **Tools / Frameworks** : ROS, Gazebo, Unity3D, OpenCV, PyTorch, TensorFlow
- **3D Softwares** : SolidWorks, Ansys, PTC Creo, Blender