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Arkajyoti Basak

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EXPERIENCE

Elektrobit, India

• **Executive Engineer, ADAS Developer** **Jan 2022-Present**

Wrote test cases for Honda project. Implemented tolerance feature in Tool Qualification scripts. Added expect-failure feature in CMake interfaces. Working on Code Generators and PlantUML.

JdeRobot, Universidad Rey Juan Carlos, Spain

• **Google Summer of Code 2022 - Mentor** **Feb 2022-Present**

Mentoring the project - Consolidation of drone based exercises

• **Software Developer, Part-time** **Aug 2021-Feb 2022**

Working Group member of jderobot-drones and RoboticsAcademy. Language/Tools - Python, C++, ROS, Gazebo, PX4, MAVLink, OpenCV, Html/Css/Js, Docker

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

Built the Robotics Academy Docker Image for ROS-Noetic. Extended the drone exercises from ROS node to web-based template. Blog

Dassault Systèmes, India

• **Design Engineer, Internship** **Feb 2021-Aug 2021**

Designed a foldable motorcycle helmet and performed static structural analysis. Showcased our product at the Industry-Academia Connect program, and won funding by Dassault Systèmes for the physical prototype.

PROJECTS

Freelance @ Upwork **Present**

- MoSAIC Challenge - Worked on depth estimation, ORB-SLAM2, object tracking, and Isaac SDK.
- Human Following Robot - POC using Mask R-CNN and ROS.
- Split & Rephrase - Built an NLP pipeline for sentence simplification.

SLAM using Turtlebot3 **2021**

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

Robotics Algorithms **2021**

• POCs for local navigation algorithm with Artificial Potential Field, coverage path planning algorithm, and 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**

• Received the first prize in the Capstone Project for the foldable helmet project.

SKILLS

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