Kolkata, India
arkajbasak1211@gmail.com

Arkajyoti Basak

iamarkaj
arkajyotibasak.tech

EXPERIENCE

Elektrobit, India

- **Executive Engineer** — **Jan 2022-Present**
  Working on advanced driver assistance systems.

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, Isaac SDK
- Split & Rephrase - Built an NLP pipeline for sentence simplification. Trained various models that utilized Stanford Dependency Parser and T5-Transformer to achieve optimal generalizability.

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**

- Proof of concepts 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**

- 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