

## EXPERIENCE

**Elektrobit India Pvt. Ltd.** | Executive Engineer Jan 2022 - Present  
Full time Software Engineer at ADAS team. Worked on Code Generators, C++, CMake, Python.

**JdeRobot Spain** | Open Source Developer May 2021 - Present  
Mentoring 1 project at Google Summer of Code 2022. Created drone-based exercises, which students of URJC use to learn computer vision and robotics. Built the **Robotics Academy** Docker Image for ROS Noetic, and VNC-based web template. Worked on PX4-Autopilot, MAVROS, ROS, and Gazebo.

**Upwork Inc.** | Freelance Robotics Engineer Jan 2021 - Jan 2022  
Completed 10+ projects. Developed Robotics solution for startups and small businesses and helped them grow. Worked on Depth Estimation, ORB-SLAM2, Graph SLAM, MASK R-CNN, YOLOv5, Deep Sort, NVIDIA Isaac SDK, ROS, Gazebo.

**Dassault Systèmes India** | Design Engineer Intern Feb 2021 - Aug 2021  
Designed a foldable motorcycle helmet and performed static structural analysis. Showcased our product at the Industry-Academia Connect Competition, and won funding by Dassault Systèmes for the physical prototype.

## PROJECTS

**SLAM using Turtlebot3** 2021  

- A small C++ and ROS project - **awesome slam** to implement SLAM based on EKF & UKF.
- Compared between the performance of EKF & UKF based pose estimation for KITTI dataset
- Checkout my blog here: <http://arkajyotibasak.tech/awesome-slam/>

**Robotics Algorithms** 2021  

- Developed proof of concepts with Artificial Potential Field and coverage path planning algorithm.
- Worked with PID controllers on a line following robot.
- Checkout my blog here: <http://arkajyotibasak.tech/proof-of-concepts/>

**AI Learns to Park** 2020  

- Created a 3D parking-lot game in Unity simulator using Python, and C#.
- Trained an ANN using Rainbow-DQN algorithm for the agent to self-park.
- Worked on setting up the communication networks using socket networking interface.
- Checkout my blog here: <http://arkajyotibasak.tech/ai-park/>

## EDUCATION

**Thapar Institute of Engineering & Technology** Patiala, India  
B.E. in Mechanical Engineering Jun 2018 - Jun 2022

**St. Xavier's Institution** Kolkata, India  
ISC Board, XII Senior Secondary, Science Jun 2015 - Jun 2017

## TECHNICAL SKILLS

**Programming & Scripting** : C++, Python, Bash, CMake  
**Frameworks** : Git, Docker, OpenCV, PyTorch, TensorFlow  
**Robotics Tools** : ROS1, ROS2, Gazebo, Unity3D  
**3D Softwares** : SolidWorks, Ansys, PTC Creo, Blender

## RECOGNITION

- Awarded first prize at Capstone Project 2021 at college.
- Selected at Google Summer of Code 2021 as Student, and 2022 as Mentor.
- Among top 4 out of 15+ projects to win Industry-Academia Connect Competition 2021 by Dassault Systèmes.