

PROFESSIONAL EXPERIENCE

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

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.

RELEVANT EXPERIENCE

JdeRobot Spain | Open Source Developer May 2021 - Present
Mentoring a 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 Computer Vision, SLAM, Navigation, Localization, and Perception pipelines.

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 using KITTI dataset.
- Checkout my blog here: <http://arkajyotibasak.tech/awesome-slam/>

Robotics Algorithms 2021

- Developed the proof of concepts for a few robotics algorithms.
- Worked on building an obstacle avoidance solution using Artificial Potential Field.
- Developed 2D grid-based maximum coverage path planning algorithm on a vacuum cleaner.
- 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
CAD/CAM: SolidWorks, Fusion 360, Ansys, PTC Creo, Blender

ACHIEVEMENTS

- Selected at Google Summer of Code 2021 as Student, and 2022 as Mentor.
- Among top 4 teams out of 15 to win Industry-Academia Connect Competition 2021 by Dassault Systèmes.