

ARKAJYOTI BASAK

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WORK EXPERIENCE

Google Summer of Code (GSoC)

May 2021 - Present

JdeRobot - Universidad Rey Juan Carlos

- Developed RoboticsAcademy Docker Image for ROS-Noetic and VNC-based web template with hardware acceleration support using TurboVNC and VirtualGL.
- Integrated RoboticsAcademy drone exercises to web-based template and migrated all the exercises from ROS-Melodic to ROS-Noetic.
- Improved the platform by adding features like **connection protocols** for sequential launching, **on-demand logs**, **automatic evaluator** based on Plotly.js
- Link to the GSoC-blog

POSITION OF RESPONSIBILITY

Open Source Developer at JdeRobot

Maintainer of RoboticsAcademy drones section

SKILLS

Programming Skills: Python, C++, Bash

Frameworks: Git, ROS, Docker, OpenCV, PyTorch

Software: Unity3D, Gazebo, Blender

Operating Systems: Ubuntu(Linux), Windows

Familiar with: HTML, CSS, JavaScript, C#, Java

Others: SolidWorks, Ansys, PTC Creo

KEY PROJECTS

Reinforcement Learning/Robotics

Present

Python, PyTorch, C#, Unity 3D, socket, Qt5, ROS, Gazebo

- **AI Learns to Park:** Developed a self-improving car parking game.
- Implemented different Reinforcement Learning algorithms like DQN, Rainbow-DQN.
- **Drone Mapping:** Developed a GUI application and configured it to rospy.
- Created the drone controller to implement 3D-Mapping & Navigation.

Natural Language Processing

Present

Python, PyTorch, pandas, NLTK, NLP Parser, T5-transformers, TF-IDF, ktrain

- Developed a **Split & Rephrase model** that can break long English sentence into multiple sentences.
- Published **sentenceninja** in PyPI that split paragraphs into sentences.
- Improved the performance of the FAQ NLP model by fine-tuning the input at atalki.com
- Developed a **sentiment analysis** model and ranked 31 amongst 1114 contestants in the Analytics Vidhya contest.

Engineering Design

Present

SolidWorks, Ansys, 3DEXPERIENCE

- **Foldable Helmet Design:** Team member of a fully funded technical team.
- Showcased in the webinar organized by La Fondation Dassault Systèmes.

EDUCATION

Thapar Institute of Engineering and Technology

Patiala, India

Bachelor of Technology in Mechanical Engineering

2018 - 2022 (Expected)