RUTVIK MAHENDRA JOSHI

Bali Raja Colony, Bali Mandir,
Nashik- 422003
Mobile: +91 8087081653
+91 7020555126

: rutweek.joshi@gmail.com
: www.linkedin.com/in/im7RJ
: www.github.com/im7RJ

Career Abstract:-

- Working as a 'Robotics Engineer' at FlytBase.
- Completed my Bachelor's in Mechanical Engineering.
- Undertook ROS Projects involving SLAM and Path Planning of the robot for practical application of the concepts learned during ROS Navigation Course.
- Undertook ROS Projects involving URDF file development of the robot for better understanding of the concepts learned during ROS Beginners Course.
- Developed the prototype of In-Pipe Water Leakage Detection Robot and the experimental setup for its testing.
- Worked as a 'Project Development Intern' with students of different institutes at Yosai Business Solutions for the R&D of Electric Vehicles.
- Became the Head of Robotics Club of my Institute.
- Worked for the development and enhancement of the Journal Paper Vending Machine for my institute.

Organizational Experience:-

FlytBase
Designation: Robotics Engineer **Aug 2021**

Yosai Business Solutions **Sept 2020 – Nov 2020**
Designation: Project development Intern

Educational Qualification:-

- B.E. – Mechanical Engineering from Sandip Foundation's Sandip Institute of Technology and Research Centre, Nashik. (2021)

Work Experience:-

Robotics Engineer (FlytBase) :-

- Created Android image for easy deployment of FlytBase App to the customers.
- Developed python program using webrtc for live streaming of video feed from Docking Station's Cameras.
- Created a Docker Container for successful deployment of FlytOS drone operating system built on ROS.
- Created python script using object-oriented programming for pushing Over-the-air updates to remote devices.
- Worked on creating python package for integrating a docking station with the FlytBase Docking Station SDK.
- Developed a pipeline for implementing Deep Learning Algorithm for Object Detection using Darknet_ROS package and YOLOv3 model on the drone's live feed and publishing it back over the cloud to the FlytNow Dashboard with minimum latency.
- Created python scripts for successful logging of the mission execution data received from the drone when conducting drone missions with docking station locally in Pune, India as well as remotely in Miami, US.
- Created C++ program for picture-in-picture live streaming of video feed from the docking station to the FlytNow dashboard.
- Conducted Research and Development tests for collecting data for the enhancement of the drone's precision landing.
- Created C++ program for enhancing the waypoint mission planning of the drone and communicating data over the cloud.
- Developed python package for processing the drone logs collected on the cloud and pushing the important data to ELK (Elasticsearch Logstash Kibana).

Certifications:-

- Robotics : Aerial Robotics (University of Pennsylvania | Coursera)
- ROS Navigation – Noetic (TheConstruct)
- URDF for Robot Modeling (TheConstruct)
- ROS Control 101-Noetic (TheConstruct)
- ROS (Python) Noetic (TheConstruct)
- Code Foundation For ROS (TheConstruct)
- Introduction to Programming with MATLAB (Vanderbilt University | Coursera)
- Computer Vision (University at Buffalo | Coursera)
- Introduction to Rocket and Satellite Engineering (Skolkovo Institute of Science and Technology)
- Artificial Intelligence (IIM Bangalore | MyCaptain)
- Internet of Things (IIM Bangalore | MyCaptain)

Project Details:-

Project: Detecting COVID-19 with Chest X-Ray using PyTorch
Role: Developer
Duration: June 2021
Description: Detecting COVID-19 with Chest X-Ray using a ResNet-18 model and train it on a COVID-19 Radiography dataset. This dataset had nearly 20k Chest X-Ray scans which are categorized in three classes - Normal, Viral Pneumonia and COVID-19.
Team Size: 1
Responsibilities:

- Creating an image classification model that can predict Chest X-Ray scans that belong to one of the three classes with a reasonably high accuracy.

Project: ROS Navigation Turtlebot 3 Project https://github.com/im7RJ/ROS-Navigation-Turtlebot3-Project
Role: Developer
Duration: June 2021
Description: Navigation package that included files for SLAM and Path Planning of Turtlebot3 Burger was created in this project which was tested in the simulation environment, a map for which is included in the package.
Team Size: 1
Responsibilities:

- Python Package development for mapping the working environment of the robot.
- Python Package development for localization of the robot in the map of the working environment.
- Python Package development for SLAM.
- Python Package development for Path Planning.

Project: URDF for Robot Modeling (JIBO) https://github.com/im7RJ/URDF-for-Robot-Modeling-TheConstruct
Role: Developer
Duration: June 2021
Description: Development of the URDF file of the existing robot JIBO, who performed its “Last Dance” as its company stopped its production and closed its servers. This project was done for learning the fundamentals of URDF programming.
Team Size: 1
Responsibilities:

- Creating the URDF file containing inertial, collision and visual tags for the robot and creating the .yaml file for the control of the robot.

Project: In-Pipe Water Leakage Detection Robot
Role: Developer
Duration: Sept 2020 - July 2021
Description: Robotics has a major scope in growth of various industries. Me and my teammates are creating an in-pipe robot to reduce the time and money spent on the detection of leakage in pipes. This will help the society in long-run.
Team Size: 4
Responsibilities:

- Worked with my team to design and develop the experimental setup.
- Tested the robot prototype using the experimental setup.

Project: Journal Paper Vending Machine
Role:
Duration: Dec 2019 - Feb 2021
Description: Students, especially of Engineering Course, require Journal Papers for submitting their assignments, throughout the entire course. One key problem associated with Journal Papers is their availability. To solve this problem, me and my teammates have developed a JPVM.
Team Size: 5
Responsibilities:

- Designing the Vending Mechanism for efficient vending of papers.

Personal details:-

Full Name: Rutvik Mahendra Joshi

DOB: 06 January 2000

Gender: Male

Nationality: Indian
Languages known: English, Hindi, Marathi (Read, Write, Speak), German