ASHIQ RAHMAN ANWAR BATCHA

Brooklyn, New York, 11201 | aa10277@nyu.edu | 5513446796

TECHNICAL SKILLS

- **Interested Area** - Perception, Path-Planning, Motion Control, SLAM, Kinematics, and Dynamics (Robotics).
- **Programming Language** - C, C++, MATLAB, Python, Linux Terminal, rospy
- **Coding Software** - Matlab - Simulink, ROS - Gazebo, MoveIt, Arduino, OpenCV.
- **Hardware Used** - RaspberryPi, Teensy, Arduino, STM32
- **CAE Software** - Inventor, Solid Works
- **Other Software** - Microsoft Office, Google Workspace.
- **Operating System** - Windows, Linux.

PROFESSIONAL EXPERIENCE

Mechatronics Intern | Solinas Integrity Pvt. Ltd.: March 2022 - June 2022| Chennai, Tamil Nadu, India

- Contributed in the research and development of an inspection bot operating inside industrial pipelines up to 250 meters.
- Experienced in localization of the bot and mapping the pipeline structure using combined data from various sensors.

PATENTS and PROJECTS

BakerBot - Smart Kitchen Robot (Patent) **Filed on 25 December 2022**

- Designed and built an active hotbox capable of maintaining a constant temperature and humidity.
- Feedback from various sensors to correctly execute a sequence of operations.

Autonomous Package Delivery Drone - Robotics Club of CEG **2021 - 2022**

- Lead and contributed to implementing the A* path planning algorithm to navigate the environment.
- Worked on localization of the bot using data from various sensors of different modalities and fused them to get filtered output.
- Executed dynamic obstacle avoidance and tracking with the trained model.
- Developed the code for detecting and delivering packages using camera input.
- Result: able to reach the destination successfully with the assistance of Google APIs.

Intelligent Line Marking Bot - Kurukshetra CEG **2021 - 2022**

- Lead and developed the localization and obstacle avoidance algorithms using ROS in RPi
- Implemented obstacle avoidance algorithm using onboard 2D lidar.
- Researched and executed methods for path following under various conditions
- Executed the algorithms in hardware using ROS architecture and obtained optimal results
- Result: able to track path with an accuracy of 10 cm.

Design and Fabrication of a 3-UPS 1-UPU Parallel Manipulator - Final Year Project **2021 - 2022**

- Researched and developed a parallel manipulator configuration capable of 5 DOF with an additional 1 DOF at the end effector
- Developed the kinematics of this configuration to study the behavior at different points in the workspace
- Result: the prototype was able to achieve mobility in the workspace as simulated

ScavengeX (Manhole operating bot) - Kurukshetra CEG **2019 - 2021**

- Worked in the fusion algorithms to combine sensor data of various modalities
- Researched mapping of the environment using cameras
- Contributed to developing the algorithms to control the bot with an accuracy of 5-10 cm.

ACADEMIC PROFILE

New York University Tandon School of Engineering **2022 – 2024**
Master of Science in Mechatronics and Robotics Engineering **3.778/4.00 CGPA**

College of Engineering Guindy, Anna University **2018 – 2022**
Bachelor of Engineering in Mechanical Engineering **3.55 / 4.00 CGPA**