CHARMIN PRITESH DESAI

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EDUCATION

University at Buffalo, The State University of New York (UB), USA **Aug 2021 – Dec 2022**

- Master of Science in Robotics (Robotics & Artificial Intelligence)
  Subjects: Robotics, ROS & Algorithms, Machine Learning, Computer Vision, AI, Engineering Mathematics

Sardar Vallabhbhai Patel Institute of Technology (SVIT), Gujarat, India **Aug 2016 – Aug 2020**

- Bachelor of Engineering in Instrumentation & Control (Industrial Automation)
  Subjects: PLC, Power Electronics & Drives, Industrial Measurement, Embedded Systems, Electrical Machines, Process Control

TECHNICAL SKILLS

Languages & Libraries: C, C++, Python, NumPy, Pandas, Matplotlib, TensorFlow, Keras, scikit-learn, OpenCV
Tools & Technology: ROS, Gazebo, SLAM, MATLAB & Simulink, AI/ML, Computer Vision, Arduino, Microsoft Office, Git
Hardware Skills: Instrumentation, PLC Automation, PID Control, Electrical, Electronics, Embedded, Circuit Design
Soft Skills: Problem Solving, Team Collaboration, Innovative, Presentable

ACADEMIC PROJECTS

Path Planning using A* Algorithm (ROS) **May 2022**

- Planned a shortest path for a robot in a stage simulator from start to goal location for a given map autonomously.
- Made the robot traverse the path autonomously while avoiding obstacles.

Face Detection and Clustering **May 2022**

- Implemented Face Detection through OpenCV using Haar Cascade Face Detector on a dataset composed of hundreds of images.
- Used KMeans Clustering algorithm to cluster the detected faces. Achieving an F1 score > 0.81 on the test dataset.

Wall Detection and Motion Planning (ROS) **Apr 2022**

- Implemented RANSAC algorithm in Python for obstacle detection through Laser Scanner data.
- Motion Planning with Bug2 algorithm in stage world simulator, utilizing data received from RANSAC node.

Neural Network and CNN on Income & Fashion-MNIST Dataset **Apr 2022**

- Built a Neural Network on Income dataset of size 32500 to predict a person's income.
  NN model accuracy of 85.6 % was achieved though Hyperparameter Tuning for optimization.
- Built a CNN on Fashion-MNIST dataset of size of 70000 images to predict the item type.
  Achieving CNN model accuracy of 92 % through Hyperparameter Tuning for optimization.

Evader-Pursuer (ROS) **Mar 2022**

- Developed control nodes to make a robot (pursuer) constantly follow another robot (evader).
- Used TF package to create a broadcaster node (for evader) and listener node (for pursuer).

Analysis of Fanuc Robot LR Mate 200-iD 6-DOF Manipulator **Nov 2021**

- Generalized the position of the tool in the Base/World Frame using the Denavit-Hartenberg Table Parameters.
- Derivation of the Jacobian Matrix by making use of the DH Table parameters.

INTERNSHIP EXPERIENCE

Tara Mechons Pvt. Ltd. **Jun 2021, India**

- Developed Automatic Turn-Off functionalities in an Electrical Cutting Machine for system/operator safety.

Larsen and Toubro Power Training **Jun 2019, India**

- Training on Industrial Instrumentation & Automatic Systems (PLC, DCS, SCADA).
- Hands on Pressure, Level, Temperature, Flow Transmitters, various Control Valves.

Niyantras Automation **Dec 2018, India**

- Developed an Indoor Air Quality Monitoring System using Arduino, C Programming, Sensor Interfacing.

LEADERSHIP

Technical Head, of I&C Engineering Department in University Tech-Fest. Showcased Automation Projects. **Feb 2019**
Sub-Technical Head, of I&C Engineering Department in College Tech-Fest. Conducted LABVIEW Workshop. **Sep 2018**