

CHARMIN PRITESH DESAI

+1(716)-614-2519 | charminp@buffalo.edu |  [LinkedIn](#) |  [GitHub](#) | Buffalo, NY, 14214, USA

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, 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, Rviz, SLAM, Machine Learning, Computer Vision, Linux OS, MATLAB & Simulink, Arduino, Microsoft Office, Git

Hardware Skills: PID & Control Systems, PLC Automation, Mechatronics, Electrical, Electronics, Embedded, Circuit Design

Soft Skills: Problem Solving, Team Collaboration, Innovative, Presentable

PROJECTS EXPERIENCE

- Path Planning using A* Algorithm (ROS)** **May 2022**
- Devised A* algorithm from scratch to plan a shortest path for a robot from start to goal location.
 - Executed the shortest path for a grid map to reach the goal location 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)** **Mar 2022 - 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** **Mar 2022 - 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 through 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.
- Analysis of Fanuc Robot LRMate 200-iD 6-DOF Manipulator** **Sep 2021 - Dec 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.
 - Analyzed singularities through concept of kinematic decoupling and derived values of joint variables in MATLAB by applying inverse kinematics on 6 DOF manipulator.

INDUSTRIAL WORK EXPERIENCE AND TRAINING

- Internship at Tara Mechcons Pvt. Ltd** **Vadodara, India, Jun 2021**
- Developed Automatic Turn-Off functionalities in an Electrical Cutting Machine for system/operator safety.
- Internship at Larsen and Toubro Ltd (L&T)** **Vadodara, India, Jun 2019**
- Training on Industrial Instrumentation Systems (PLC, DCS, SCADA) and Industrial Visits.
- Internship at Niyantras Automation** **Vadodara, India, Dec 2018**
- Experience with Microcontroller, Linux OS, C Programming, Sensors Interfacing
 - Developed Air Quality Monitoring System

LEADERSHIP EXPERIENCE

- Technical Head**, Teamwork in Prakarsh Tech-Fest, Showcased Automation Projects of I&C Department, SVIT **Feb 2019**
- Sub-Technical Head**, Teamwork in Aavishkar Tech-Fest, Organized LABVIEW Workshop, I&C Department, SVIT **Sep 2018**
- Volunteered**, International Society of Automation (ISA), under ISA Student Chapter of I&C Department, SVIT **2018-2019**
- Volunteered**, Teamwork in Workshops/Seminars on PLC, Control Valves, SPI Intool of I&C Department, SVIT **2018-2019**