

# CHARMIN PRITESH DESAI

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## CAREER PROSPECT

Currently seeking for a Full Time Job as a Robotics/Mechatronics/Automation Engineer in the 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)

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

- Bachelor of Engineering in Instrumentation & Control (Industrial Automation)

## TECHNICAL SKILLS & TOOLS

**Programming Languages & Libraries:** C, C++, Python, NumPy, Pandas, Matplotlib, TensorFlow, Keras, Sklearn, OpenCV

**Tools & Technology:** ROS, Gazebo, Rviz, SLAM, Arduino IDE, Linux OS, Windows OS, Microsoft Office

**Software Skills:** MATLAB & Simulink, Machine Learning, Computer Vision, Command Line, Git

**Hardware Skills:** PLC Automation (Ladder Logic), Embedded Systems, Mechatronics, Electrical & Electronics

**Soft Skills/Other:** Problem Solving, Team Collaboration, Innovative, Presentable

## TECHNICAL PROJECTS EXPERIENCE

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

- Planned and executed a shortest path for a robot in a simulator from a start to a goal location for a given map autonomously, avoiding obstacles using A\* algorithm written in Python from scratch.

**Wall Detection and Motion Planning (ROS Noetic)** 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.

**House Price Prediction using Linear Regression & Gender Prediction using Logistic Regression** Feb 2022 – Mar 2022

- Analyzed data to forecast house prices in Boston based on crime rate, number of rooms, and other features. Achieving 94.8 % accuracy using the Linear Regression model.
- Implemented data analysis on PENGUIN Dataset to identify the gender of the penguins using various features. Built Logistic Regression Model with 91% accuracy.

**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 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.

**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.

**Industrial Power Training at Larsen and Toubro Ltd (L&T)** Vadodara, India, Jun 2019

- Training on Industrial Instrumentation Systems (PLC, DCS, SCADA) and Industrial Visits.

**Internship at Nyantras Automation** Vadodara, India, Dec 2018

- Experience with Microcontroller, Linux OS, C Programming, Sensors Interfacing
- Developed Air Quality Monitoring System

## LEADERSHIP EXPERIENCE & INVOLVEMENT

**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