

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)
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 & TOOLS

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

TECHNICAL 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.

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 Niyanttras 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**