VRUSHABH DESAI

github.com/vrushabhdesai

+1 (508) 206-0188   21 Dix St. Apartment #1,   vmdesai@wpi.edu

Portfolio: vrushabhdesai.github.io   Worcester, MA, 01609.   linkedin.com/in/vrushabhdesai/

EDUCATION

Worcester Polytechnic Institute, Worcester, MA   **May 2021**

Master of Science in Robotics Engineering

Relevant courses: Machine Learning, Computer Vision, Foundations of Robotics, Deep Learning*, Motion Planning*, Robot Dynamics*

Dwarkadas J. Sanghvi College of Engineering, Mumbai, India   **June 2018**

Bachelor of Engineering in Electronics Engineering

Relevant courses: Artificial Intelligence, Control Systems, Embedded System, Object-Oriented Programming.   **CGPA: 8.7/10**

TECHNICAL SKILLS

- **Programing Language:** C, C++, Python, LUA, and HTML5.
- **Software:** MATLAB, Visual Studio, ROS, Atmel Studios, SolidWorks, LabVIEW, Eagle PCB, Rapid Harness, Adobe Photoshop.
- **Libraries:** TensorFlow, PyTorch, OpenCV, Scikit-learn, Numpy.

WORK EXPERIENCE

Grushie Energy Private Limited, Mumbai, India.   **June 2018 - June 2019**

Electronic Design Engineer

- Designed an Electronic Control Unit using ATmega 1284P with TJA1050 which enables CAN capabilities. Developed its embedded firmware using C. ECU handles all communicates with its peripherals on customized Control Area Network bus.
- Led the Controls team, created a steering system for the autonomous delivery bot using Raspberry Pi 3 and Open CV.
- Designed electric wiring harness considering DFMEA for an electric motorbike using Rapid Harness.
- Designed a Level-2 Electric Smart charger along with new technology, Li-Key (Light-key) which used photodetectors as a sensor.

KP Footwear, Mumbai, India.   **June 2016 - August 2016**

Business Development Intern

- Analyzed weekly sales and manufacturing data of the products using customized software which used Machine Learning.
- Presented a brief report on the sales of the company and proposed an effective strategy that increased the profits by 10%.

ACADEMIC PROJECTS

Distracted Driver Detection using Machine Learning Technique   **September 2019 - December 2019**

- Implementing an API that identifies the distracted driver and triggers the onboard alarm which helps to focus on driving.
- Designed and trained a different multi-class classification algorithm and CNN's on 22.5k labelled images, capable of detecting 10 different human distractions based on driver's activity with an average accuracy of ~ 94%.

Detection and Recognition of Traffic Signals   **September 2019 - December 2019**

- Extracted image feature's using SHIFT, SURF, Hough Transform, and dynamic thresholding to detect traffic signal in a frame.
- Integrated Deep Neural Network based object detection method YOLOv3 for robust detection and SVM for status recognition.

DJS Racing (Formula Student Team)   **March 2016 - May 2018**

- Developed a power distribution module for F-1 style race car and interfaced with a high-tech servo motor to actuate the clutch.
- Designed a data logging and 3G Telemetry system using Race Capture pro MK3 which collects data from various sensors on the car and store the real-time data on cloud. Effectively developed a closed loop Drag Reduction System for Aerodynamic package.

Autonomous Robotic Arm   **June 2017 - March 2018**

- Analyzed forward Kinematics of 3 DOF robotic arm and designed the CAD model on SolidWorks studied the strength of the structure using FEA.
- Trained the arm to reach the desired location using principle of supervised learning algorithm using LabVIEW for computing.

ADDITIONAL COURSES

- Certified Course in Robotics: Mobility, Modern Robotics, MATLAB Programming from Coursera.
- Certified Course in Mastering Microcontrollers, Python, Introduction to CAN BUS Technology from Udemy.

ACHIEVEMENTS

- Won a consecutive award for ''*Best Designed Formula Student Car Award*'' at Formula Bharat, India in 2017 and 2018.
- Was *"Second Best Asian Team and Best Indian Team''* at Formula Student Germany 2017 held in Hockenheim Ring, Germany.
- Won *"Static Event (Cost)"* at Formula Student Austria held in July 2018 at Red Bull Ring, Austria.