

VRUSHABH DESAI

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EDUCATION

Worcester Polytechnic Institute, Worcester, MA

May 2021

Master of Science in Robotics Engineering

Relevant courses: Foundations of Robotics, Machine Learning, Computer Vision.

Dwarkanadas J. Sanghvi College of Engineering, Mumbai, India

June 2018

Bachelor of Engineering in Electronics Engineering

Relevant courses: Artificial Intelligence, Control Systems, Embedded System, Advance Instrumentation Systems.

CGPA: 8.7/10

WORK EXPERIENCE

Grushie Energy Private Limited, Mumbai, India.

June 2018 - June 2019

Electronic Design Engineer

- Designed electric wiring harness considering DFMEA for an Electric Motor Bike using Rapid Harness.
- Developed an Electronic Control Unit using ATmega 1284P with TJA1050 which enables CAN capability. ECU communicates on CAN network with motor controller and speedometer, also controls onboard system like cooling and tacking system.
- Designed a Level-2 Electric Smart charger along with new technology, Li-Key (Light-key) which used LDR as a sensing element.
- Designed a steering system control for autonomous delivery bot prototype using Arduino, limit switches and stepper motor.

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.
- Documented and presented a brief report on the profit and loss of the company and effective strategy that can be applied to increase company profit.

ACADEMIC PROJECTS

DJS Racing (Formula Student Team)

March 2016 - May 2018

- Developed a power distribution module for F-1 style race car and interfaced it with 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

- Designed the CAD model of 3 DOF robotic arm on SolidWorks and analyzed the strength of the structure using FEA.
- Trained the arm to reach desired location using a supervised learning algorithm and used LabVIEW to implement the algorithm.

Gesture Control Robotic Arm

January 2017 - April 2017

- Designed 3DOF robotic arm and interfaced it with custom ATmega32A board developed using EDA tool like Eagle, which gets input data from an inertia sensor (MPU 6050) mounted on the user's hand and accordingly controls movements of the arm.

Electromagnetic Pulse Generator

August 2016 - October 2016

- Analyzed the circuit passive components characteristics using simulation tools like LTspice, used components like Power MOSFET, BJT, Capacitor load bank and IC555. Successfully generated 150V surge as an output voltage.

TECHNICAL SKILLS

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

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.