Jasdeep Dhillon
Mechatronics Engineering
University of Waterloo (2018)

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Skillset

Hardware
- Mixed Signal Electronic Design | LTSpice
- Power Electronics, Signal Filtering
- PCB Design, Schematic Capture | Altium
- Soldering & Circuit Assembly
- Hardware Prototyping
- Firmware Programming
- Arduino, Teensy, PIC

Mechanical
- SolidWorks
- 3D Printer and Milling Machine
- Design of Electromechanical Systems

Software
- C and C++
- MPLAB
- Java and Python

Work Experience

X-Matik | Mechatronics Engineer
October 2018 - April 2019
- Programmed wheel and brake actuators to add autonomy to existing vehicles
- Designed an in line current measurement PCB
- Programmed a diagnostic tool to test functionality of PCB
- Programmed drivers for PIC

Drone Delivery Canada | UAV Field Technician
September 2017 - December 2017
- Integrated new sensors onto existing drone and conducted field tests
- Designed a drone for training new hires
- Programmed flight paths in and coded a speed cornering function

University of Waterloo | Research Assistant
May 2017 - August 2017
- Assembly and testing of Spatial Atomic Layer Deposition (SALD) system
- Redesigned reactor stand ,in Solidworks, with thermoelectric cooling

Projects

Autofuel (Final Year Project)
- Designed and constructed a Cartesian robot to automate the vehicle refueling process
- Responsible for choosing power supply, sizing motors and choosing hardware
- Assembled system, machined parts and created parts in Solidworks for 3D printing
- Designed and machined enclosure for PDU with CSA approval

Line Following Robot
- Designed and soldered multiple circuits on PCB to create a line following and magnet sensing robot
- Programmed microcontroller in C

Bike Gloves
- Designed prototype using Arduino
- Programmed app that communicates with Arduino through Bluetooth to notify biker what direction to turn

Lane Detector
- Took in a video of the road and identified lanes on the road
- Used OpenCV to find the lane and created an overlay on the lane found

Linear Classification
- Coded a Nearest Neighbour Classifier to identify pictures from CIFAR-10 dataset

Semantic Segmentation
- Used AlexNet to label images in a picture of a street

Accreditation

University of Waterloo, Bachelor of Applied Sciences
- Mechatronics Engineering, 2018, Honours