

# Jasdeep Dhillon

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<https://jasdeepdhillon13.github.io/website/>

## Work Experience

### Research Assistant

University of Waterloo

May 2017-Present

- ✦ Assembly and testing of Spatial Atomic Layer Deposition (SALD) system
- ✦ Redesign of reactor stand in SolidWorks and machining of stand
- ✦ Designing thermoelectric cooling for the reactor stand

### R&D Engineer

Magna International

September 2015 - December 2015

- ✦ Designed a PLC to monitor pressure and temperature data of paint booths
- ✦ Researched air balancing paint booths and controlling paint trajectory solutions
- ✦ Researched the relationship between dirt and static charges on car parts

### Automation Developer

Citigroup

May 2014 - August 2014

- ✦ Programmed an automation tool to reduce time spent on Sanity testing by 60%
- ✦ Decreased computation time by incorporating multithreading
- ✦ Implemented JMS API to communicate with databases using SQL

## Projects

### Autofuel (Capstone project)

- ✦ Designing and constructing a Cartesian robot to automate the vehicle refuelling process
- ✦ Responsible for mechanical and electrical assembly, SolidWorks design and machining

### Search and Recovery Robot (University)

- ✦ Designed an automated vehicle to traverse and locate a base in a defined course
- ✦ Machined modifications to the enclosure and designed parts in SolidWorks
- ✦ Calculated motor torque requirements and proof of concept calculations

### Light Painting Robot (University)

- ✦ Programmed a Fanuc robot to recreate a user's path to produce a light painting

### Line Following Robot (University)

- ✦ Designed circuits with various actuators and sensors
- ✦ Programmed to follow a path

### Bicycle Gloves (Personal – in progress)

- ✦ Gloves that provide direction to a cyclist through haptic feedback

## Software and Hardware

Assembly Language  
Microprocessor and Interfacing  
FPGA and VHDL  
PLC and PLC hardware  
AutoCAD and Unigraphics NX  
SolidWorks  
Matlab and Simulink  
C and C++  
Java  
PSIM  
Labview  
Keil MCB1700 Evaluation Boards  
Pic-Axe Programming  
RobotC and Logicator  
Altera Cyclone II  
Keil RTX RTOS  
3D Printer and Milling Machine  
Band saw and Drill Press  
Soldering  
EagleCad

## Education

**Candidate for Bachelor of Applied Science, Mechatronics Engineering, University of Waterloo, Sept 2012 - Present**

### Relevant Courses

- |                                     |   |                               |
|-------------------------------------|---|-------------------------------|
| ✦ Numerical Methods                 | ✦ Computer Structures and Real Time Systems | ✦ Automatic Control Systems   |
| ✦ Linear Systems & Signals          | ✦ Actuators and Power Electronics           | ✦ Sensors and Instrumentation |
| ✦ Microprocessors and Digital Logic | ✦ Microprocessor Systems and Interfacing    | ✦ Robot Manipulators          |
| ✦ Digital Controls                  | ✦ Power Electronics and Motor drives        | ✦ Electromechanical Design    |

## Interests

Design | IoT | Technology | Robots | Badminton | Hockey | Biking | Anime | Gaming | Drawing | Soccer | Physics | Music