MAHMUBUL HOQUE

Mechatronics Engineer

University of Waterloo

Contact Information

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Skillset

**Electrical**

* Mixed Signal Electronic Design | LTSpice
* Circuit Testing/Optimization
* Power Integrity, Signal Filtering
* PCB Design, Schematic Capture | Altium, Eagle

**Hardware**

* Hardware Rapid Prototyping
* Control System Design | Implement, Simulations
* Data Acquisition with Test Automation
* Firmware Programming | FPGA, ASIC, PLC, HMI
* Use of Matlab, Simulink, and LabVIEW

**Mechanical**

* CAD Modelling | AutoCAD, SolidWorks, Catia
* Mechanical Analysis | FEA, Materials, Thermal
* Manufacturing Design | Six Sigma, Lean
* Design of Electromechanical Systems
* Reliability Testing, Analysis of Results

**Personable**

* Keen Eye for Details
* Positive Client Interactions
* Project Management | Budget, Schedule, Specs

Work Experience

**Stantec Consulting | Electrical Design Engineer**

May 2017 - August 2017

* Designed Revit electrical schematics, accounting for lighting, security, and acoustics
* Analyzed 3 Phase, High voltage, AC power and proper transformer rating, adhering to CSA

**Tesla | Prototype Engineer**

August 2016 - December 2016

* Designed test setups to validate integrity of new electric vehicle concepts -> Tesla Truck
* Circuit Design, Board Testing, Signal Processing, Hardware Integration, and Controls Simulations

**Canadian General Tower | Electrical Engineer**

December 2014 - May 2015

* Designed controls simulation of entire weld lines to improve manufacturing efficiency by 140%
* Hands on experience with various robots, PLC and Embedded Systems for optimization

Projects

**Wind Tunnel Controller (Work Project)**

* LabView control system and GUI design
* Interfaced multiple sensors, implementing sensor fusion for real-time road simulation
* Created 3D visual simulation to see dynamic pressure changes over chassis of vehicle
* Implemented I/O data logging with dynamic data referencing for reverse video analysis

**Smart Lock System (Personal Project)**

* Developed product to eliminate need for peripherals and introduce automation
* Rendered enclosure in Solidworks, optimised via mech analysis; FEA, thermal, impulse, shock
* Captured PCB schematic to interface with low voltage peripherals, minimizing power usage
* Scripted Python based facial + voice recognition, while accounting for fail safes and security
* Product Design and Manufacturing, Circuit Testing, Mechanical Design, and Software

**Virtual Fitting (Final Year Project)**

* Developed product to eliminate fitting issues and facilitate online clothes shopping
* Lead in deciding appropriate hardware, as well as designing PDU with CSA approval and budget
* Designed product enclosure, considering visual appeal and mass/thermal distribution
* Scripted AR to capture live body dimensions and dynamically overlay clothes
* Product Design, Hardware Testing, Circuit Design, Team Management, and VR Simulations

Accreditation

**University of Waterloo,**

**Bachelor of Applied Sciences**

* Mechatronics Engineering, 2018, Honours
* Minor in Cognitive Sciences, 2018

Interests & Activities

* Racket sports
* Space travel
* Able to make minute rice in 56 seconds