MAHMUBUL HOQUE

Mechatronics Engineer
University of Waterloo

Contact Information

Email: MahmubulH@Gmail.com
Cell: (289) 689-5649
Website: www.mahmubulh.github.io

Skillset

Electrical

- Analog/Digital Electrical Circuit Design
- Circuit Testing and Optimization (Efficiency/Cost)
- PCB Design and Schematic Capture
- Power/Signal Integrity and Filtering
- Soldering and Circuit Assembly

Hardware

- Hardware Prototyping and Testing
- Control System Design and Simulation
- Firmware/Embedded Systems
- Test Automation; Python, C, C++, C#
- Use of Matlab, Simulink, and LabVIEW

Mechanical

- CAD Design; AutoCAD, SolidWorks, NX, Catia, Revit
- Design Prototyping and Optimization via FEA
- Material Selection via Environmental Analysis
- Dynamic Mass, Thermal, and Shock Analysis
- Reliability Testing and Analysis of Results

Personable

- Keen Eye for Details
- Able to Work Independently
- Project Management

Work Experience

Electrical Design Engineer @ Stantec Consulting
May 2017 - August 2017

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

Prototype Engineer @ Tesla
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

Controls Engineer @ Canadian General Tower
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; optimizing their performance

Projects

Wind Tunnel Controller (Work Project)

- Designed easy-to-use GUI on LabVIEW
- Interfaced linear actuators for (a)synchronous ride height control and 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 locking peripherals and introduce automation with remote control
- Rendered enclosure in Solidworks, accounting for environmental exposure and security detail
- Schematic capture Pi based PCB to interface with low voltage peripherals and minimize 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 Design

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