HAMZA AHMED

Electrical Engineer & Tech Enthusiast

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EXPERIENCE

Electrical Designer Co-Op
AVIGILON

Jan 2019 – Aug 2019 Vancouver, BC

- Created schematic captures and PCB layout for IR LED boards on Avigilon's new line of camera using Altium Designer
- Developed Python script to automatically update Git Repository with new hardware components when implemented in Altium Designer software by electrical designers
- Designed and programmed electronic test jigs for long-term reliability check of IR cut filters from new suppliers

Electrical Engineer Co-Op
AURORA INDUSTRIAL MACHINES INC.

June 2018 – Dec 2018 Richmond, BC

- Assisted in the development and testing of power electronic systems for company's high efficiency electrical motors and generators
- Followed complex electronic schematics and specifications to solder components and build electronic circuits such as Power Converter PCBs that were used to drive motor
- Programmed Arduino in C with on-board sensors to wirelessly record motor rotational speed and on/off behavior

PROJECTS

Portable Rapid Response Satellite Earth Station
UBC Capstone Project

Sep 2019 – Apr 2020 Vancouver, BC

- Designed and created a RF Ground control station capable of communicating with amateur satellites in LEO
- Implemented power electronics needed to boost the reception and transmission of satellite signals via 70-cm Yagi antenna
- Designed power electronics enclosure to run off a 120 V wall outlet or a 12 V car battery during field use cases
- Assisted in creating revamped GUI that incorporated automatic satellite tracking and scheduling and data receiving/decoding softwares into one compact and easy-to-use interface,

Motor Design & Development
UBC

Jan 2018 – Mar 2018 Vancouver, BC

- Designed and 3D printed components of two brushed PMDC motors using SolidWorks in order to mount and control laser to draw shapes
- Programmed larger motor to control horizontal movement and smaller motor to control vertical movement of the laser pointer service.
- Collaborated with controls team to digitally control speed and direction of motor using a PIC32 microcontroller on a custom-made PCB incorporating a motor driver circuit and other essentials

For detailed information on completed projects, please visit: https://hamzas.ca/images/projects.pdf

EDUCATION

B.ASc in Electrical Engineering
University of British Columbia

Sep 2016 – May 2020

CS50x - Data Structures & Algorithms Certificate
Harvard University

Sep 2020 - Oct 2020

SKILLS

Java | C/C++ | MATLAB/R | Python | Flask | Verilog/SystemVerilog | HTML | CSS | JavaScript | SQL | ARM/8051 Assembly

Altium Designer | ModelSim | Visual Studio | MS Office | SolidWorks | SVN/Git | JIRA | Confluence | Agile PLM

FPGA Design | Soldering | Oscilloscope | Microcontrollers | BC Class 5 Driver's License | Basic Amateur Radio License with Honours

EXTRA-CURRICULAR

International Field Trip Co-Lead @ UBC IEEE
Organized an international field trip to Sweden for 15-20 university students as part of the IEEE department at UBC while managing a budget of $20,000+

Battery Pack Designer @ UBC Solar
Designed and assembled battery pack to power a solar powered racing vehicle motor and peripherals.

PC Assembly
Assembled & built multiple PCs over the course of a decade. Debugged & troubleshooted hardware, software & operating system issues within builds.