

Ahmed Hassan

Electrical and Biomedical Engineer

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Skills

Languages: Python, Matlab/Simulink, Java, C/C++, Assembly Language, HTML/CSS, PHP, Visual Basic

Design & Tools: AutoDesk Inventor, SolidWorks, OrCAD - PSpice, Minitab, VHDL, Quartus, LabVIEW, TestStand, SignalExpress

Lab Equipment: Electronic Load, Oscilloscopes, Power supply, Soldering, Xitron - Power Analyzer, Current Probe Amplifier, Thermotron



Education

B.Eng, Electrical and Biomedical Engineering — (Expected April 2021)

McMaster University, Hamilton ON

- Currently in level three of a four-year honours engineering program majoring in **Electrical and Biomedical Engineering**.
- **Dean's Honour List** (2016-2018), 3.7/4.0 GPA.
- **Teaching Assistant** for 1P13 Integrated Cornerstone Design Projects in Engineering (Sept 2020-April 2021), and 1D04 Engineering Computation (January 2018 - April 2019).



Project Work

IHAD — (2019)

- Proposed a design for an **I**mplantable **H**eart **A**ttack **D**etector, that uses integrated circuits connected to electrodes to monitor changes in cardiac rhythms(EKG) combined with a chemical sensor to monitor chemical signals in the body.
- Such signals were to be sent to a medical bracelet to alert the user through different coloured LEDs and vibration.

Angle Data Acquisition — (2019)

- Used a Micro-controller(Esduino) and a transducer(angle sensor) to build a single channel data acquisition system with digital I/O(button to start/stop, BCD led output).
- The process involved data processing and Analog-to-Digital conversion to allow for communication between signals from the device to a computer interface for data readability.

Prosthetic hand — (2017)

- Designed and built a working prototype of a prosthetic hand with the use of AutoDesk Inventor and 3D printed gears.
- The device was capable of picking up small objects with the help of a motor.



Experience

Resarch and Developent Internship — (May 2019 - September 2020)

Cooper Lighting Solutions(Formerly Eaton), Mississauga, ON

- Collaborate with the R&D team to work through the product development process of various lighting related products such as LED drivers, motion sensors, light sensors and other types of lighting control devices.
- Develop software to create automated test systems to test product hardware and firmware functionality across a wide range of operating conditions.
- Select and source the appropriate data acquisition equipment to carry out the needs of the automated systems.
- Design and construct test jigs for in lab automated tests and end of line production test systems.
- Assist in testing and troubleshooting of beta products at customer installation sites.
- Collaborate with R&D team to expose and solve firmware and hardware bugs.
- Co-ordinate with outside suppliers to construct components of test systems that exceed the capabilities we have in house.
- Participate in the ongoing safety upgrades of the electronics lab through new operating procedures and implementation of additional sensors and control systems.



Interests & Activities

- Hackathons, case studies, and project design.
- Lifeguarding & Swim instructing.
- Member of life saving society and certified in First Aid and CPR C.
- Lab & Safety training: Asbestos Awareness, AODA and Human rights Code, Ergonomics, Fire Safety, Slips Trips and falls, Violence and Harassment prevention, WHIMIS.