

Pavel Shering

B.A.Sc. HONOURS MECHATRONICS ENGINEERING | UNIVERSITY OF WATERLOO 2018

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SUMMARY OF QUALIFICATIONS

- Programming/prototyping with microcontrollers and development platforms such as **STM32**, **Keil Vision**, and **ARM**
- Adept academic and practical knowledge of **RTOS**, **data structures**, **algorithms**, and **complexity analysis**
- Strong **controls** fundamentals including **non-linear**, **optimum control**, **state-space models** and **multi-variable controls**
- Development experience with **Embedded C**, **C++**, **Python** and **MATLAB**
- Practical knowledge of **signal conditioning circuits** for integrating various sensors
- Electrical **schematic design** experience with familiarity in schematic capture/layout using **Altium Designer**
- Strong foundation of **engineering analysis** skills; experienced with 3D CAD in **SolidWorks**, **CATIA**, and **NX**
- Adept with **machine tools** and mechanical assembly; familiar with **rapid prototyping** techniques

TOOLS

Git ●●●●●●
C ●●●●●●
C++ ●●●●●●
ROS ●●●●●●
Python ●●●●●●
MATLAB ●●●●●●

Altium ●●●●●●

Solid Works ●●●●●●
Siemens NX ●●●●●●
CATIA ●●●●●●

HACKATHONS

BATTLEHACK

Jan 2016 | Toronto, ON
Developed a real time restaurant ordering system with Python; earned a Pusher API partner prize

HACK THE NORTH

Sep 2015 | Waterloo, ON
Developed a wearable system for the visually impaired that verbally describes the surroundings with Tesseract OCR

HACK WESTERN

Apr 2015 | London, ON
Designed a system to prevent drowsy driving using Myo, Muse headband, Python and Lua

INTERESTS

Varsity Ultimate (5 years)

Pro/Elite Ultimate AI

Rock Climbing

For **projects** go to **pavelshering.com**

EXPERIENCE

ECOBEE | EMBEDDED QA ENGINEER

May 2019 – Present | Toronto, ON

- Developed an extreme gradient boost classifier for initial steps of cold start schedule personalization using scikit learn and SHAP
- Developing a DeepFeedForward NN for the above problem in Tensorflow 2.0
- Developed automation infrastructure for end to end verification of various smart thermostat features (ie eco+)

NYMI | EMBEDDED SOFTWARE ENGINEER

May 2018 – Sep 2018 | Toronto, ON

- Independently developed a system level testing framework adapting Pytest
- Developed an application for automatically upgrading Nymi Bands with Python
- Prepared multiple performance benchmark studies
- Created variety of engineering tools to help with development ie, Jenkins autodeploys, encryption analysis, firmware image verification, etc.

Jan 2016 – Apr 2016 | Toronto, ON

- Independently developed a unit test harness adapting Unity test framework using C
- Automated the unit test framework with Python and integrated it into BuildBot
- Simulated the Nymi Band on desktop OS to decrease build and test times for developers

TESLA | SYSTEM VERIFICATION AND INFRASTRUCTURE ENGINEER

May 2017 – Sep 2017 | Palo Alto, CA

- Developed HW & FW component behaviour requirements and specifications for Model 3
- Developed automated system level charging tests using Python to support the M3 launch
- Analyzed CAN traces with PCAN Explorer & CANape finding component and system issues

APPLE | SENSORS SQA ENGINEER

Sep 2016 – Dec 2016 | Cupertino, CA

- Independently designed, assembled and assessed fixtures using Siemens NX to test Hall effect and magnetometer sensors in iOS devices
- Designed prototypes for various sensor mechanisms in specific applications
- Interacted with vendors to ensure the fabrication is meeting specifications

STUDENT DESIGN TEAM

WATERLOO FORMULA ELECTRIC | FIRMWARE MEMBER

Jan 2014 – Feb 2018 | Waterloo, ON

- Designed and tested custom dashboard PCB with an LED array and an STM32
- Developed firmware in C that uses CAN communication protocol to drive the array.
- Assembled, tested and brought up various vehicle PCBs ie (DAQ, WSB, MCU).
- Additionally involved in machining various components such as battery box, sheet metal parts, aluminum components and composites
- Had the chance to present the 2016 vehicle at the IEEE conference in Michigan