

EMMA XIE

MECHATRONICS ENGINEERING

email: emma.xie@uwaterloo.ca

mobile: 416.818.8610

web: eexie.github.io

SKILLS & TOOLS

- Applied skills in **circuit design**, schematic capture (**Fritzing, EagleCAD**), hardware debugging (**oscilloscopes, DMM, signal generators**), & **soldering** from student design team and course work
- Rapid prototyping experience using microcontrollers (**Arduino, NXP LCP1768**), **Raspberry Pi**, wearables (**Myo, Oculus Rift**), **3D printing**, & **laser cutting** via personal and work-related projects
- Proficient in **Python, C#, C++, C, JavaScript & MATLAB**, with experience using frameworks such as **Tensorflow, WebRTC, Flask, & Django** via work placements & personal projects.
- Exposure to mechanical design and analysis using **Solidworks, AutoCAD, Fusion 360** with **CNC machining** experience via student design team and university projects

EDUCATION

Bachelor of Applied Sciences, 3rd Year Mechatronics Engineering *University of Waterloo*

WATERLOO, CANADA. SEP 2015 - APR 2020

- Enrolled in the co-op program achieving 24 months of engineering work experience upon graduation
- Relevant courses: Sensors & Circuit Theory, Digital Logic & Microcontrollers, Data Structures
- Represented university at international design competitions and engineering conferences
- Active volunteer on the Women in Engineering committee, "HeForShe" Engineering group, and Campus Sustainability Initiative

Mechanical Engineering, *Lund University*

LUND, SWEDEN. SEP 2018 - JAN 2019

- Exchange semester, courses: Automatic Controls, Applied Mechatronics, Sustainable Eating, Scandinavian Modern Design

INTERESTS

Photography, human-computer interaction, traveling, interactive art, graphic design, architecture, environmental sustainability, films, volunteering

EXPERIENCE

Software Engineer, Autonomoose, University of Waterloo

WATERLOO. JAN 2018-APR 2018

- Developed embedded software and algorithms for autonomous vehicles
- Trained reinforcement learning models for vehicle perception software

Embedded Design Engineer. Evertz Microsystems

BURLINGTON. JUN 2017-AUG 2017

- Led the new development of a real-time media broadcasting-over-IP solution for live captioning using WebRTC (JavaScript)
- Developed firmware for audio encoding boards, utilized low-level serial (RS-232), IP network communications and real-time systems concepts

Rapid Prototype Developer. Canon Innovation Lab

KITCHENER. SEP 2016-DEC 2016

- Based on customer needs, conceptualized and executed 5 unique full-stack web and electro-mechanical solutions as proofs of concept
- Prototyped a web-native application allowing video-editing by sentences, with user feedback from video-bloggers
- Developed solutions on multiple platforms (web, iOS, Arduino, VR)

Innovation Specialist. Scotiabank Digital Factory

TORONTO. JAN 2016-APR 2016

- Researched and applied neural networks and deep learning models to financial applications in Python using Tensorflow

ACTIVITIES

Dyno Harness Lead - Electrical System.

UW Formula Motorsports (FSAE)

WATERLOO. SEP 2016-FEB 2017

- Redesigned the power distribution of the fusebox and signal transmission of the engine control unit
- Analysed sensor readings with a custom data logger to optimize engine & driver performance and validate designs
- Led the build of the dyno harness used for engine tuning
- Modeled dozens of electrical and suspension components in Solidworks

International Relations Commissioner.

(Past: Media & Marketing Commissioner)

Canadian Federation of Engineering Students (CFES)

NOV 2016-PRESENT

- Integral member of an 18 student national team, which represents and advocates for 85,000+ Canadian undergraduate engineering students
- Actively identifying and executing collaborative projects with global student organisations as the official Canadian student representative
- Conceptualized and executed the full redesign of the website (cfes.ca)
- Advocated on topics of diversity, sustainability, and engineering education at over a dozen national and international conferences