

# EMMA XIE

## MECHATRONICS ENGINEERING



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### SKILLS SUMMARY

Variety of manufacturing experiences on automotive chassis, suspension and aerodynamics components

Electrical skills include PCB design, soldering, crimping, sensor analysis, wire management

Machining experience using CNC machines, power tools, and CAD experience in AutoCAD and SolidWorks

Rapid prototyping experience with microcontrollers (Arduino), single-board computers (Raspberry Pi, Intel Edison), wearables (Myo, Oculus), 3D printing

Proficient in Java, C++, Python, HTML, CSS, JS

Adept in fast-paced environments, highly motivated with exceptional attention to detail

G-licensed

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### EDUCATION

**MECHATRONICS ENGINEERING.**  
**UNIVERSITY OF WATERLOO**  
WATERLOO. SEP 2015-PRESENT

Represented university at international design team competitions (FSAE Michigan) and national engineering conferences (ESSCO)

Directorship positions in Music, Media, Merchandise and WiE with the Engineering Society

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### INTERESTS

Hackathons and conferences, photography, graphic design, Blue Jays, Formula 1, movie soundtracks, foreign films, escape rooms

### EXPERIENCE

**ELECTRICAL TEAM, UW FORMULA MOTORSPORTS**  
WATERLOO. SEP 2016-PRESENT

Wired dyno and main engine harness and mounted electronic components of an internationally competitive Formula SAE car

Machined 50+ metal components and manufactured aerodynamic components using carbon fibre composites

Assembled multiple driveline components including the differential

Assisted with suspension assembly and chassis stress analysis

Analysed sensor readings to optimize driver and car performance

Designed electrical housing units in Solidworks

**INNOVATION ENGINEER,**  
**SCOTIABANK DIGITAL FACTORY**

TORONTO. JAN 2016-APR 2016

Explored and applied neural networks and deep learning

philosophies to financial applications in Python using Tensorflow

Initiated and maintained an internal blog series educating the employee community on machine learning

Scanned and reported on the FinTech ecosystem to executives

**ELECTRIC SHEEP, VEX ROBOTICS**

TORONTO. SEPT 2011-APR 2015

Team lead in 2015, led the design of a robot utilizing mechatronics drive, a scissor lift with PID controls, and complete with an autonomous driving program

Led chassis build and motor organization in 2014

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### PROJECTS

**MYOPHYSIO. DELTAHACKS 2016**

MCMASTER UNIVERSITY. JAN 2016

Developed an Android app for the Myo armband, allowing and

reminding carpal tunnel patients to do physical therapy on-the-go

Integrated Myo gestures, designed and implemented app assets, enabled push notifications

Won Best Hardware Hack

**DRYERASE STOCKS. BOSTONHACKS 2015**

BOSTON UNIVERSITY. OCT 2015

Used an Arduino Uno, a Raspberry Pi 2, and two stepper motors to plot stock market or bank account data on a dry erase board

Designed and built mechanical assembly, calculated coordinate math, set up Raspberry Pi-to-Arduino data transfer

Won \$1000 Capital One API award.