MATTHEW ROMLEWSKI

mechatronics engineering student with a passion for making

Contact

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www.github.com/mattromlewski

Skills

Development

C++, Python, HTML5
Linux, PLCs, Arduino
Java, Javascript
SQL, LaTeX

Tools

- Solidworks, Fusion 360
- AutoCAD, GD&T
- Robotic actuators and sensors
- Alexa Skills Kit
- Android Studio
- Git, Subversion

Education

University of Waterloo

Candidate for B. A. Sc., Mechatronics Engineering
2016 - Present
Co-op evaluation: Outstanding
Data Structures and Algorithms
Engineering Graphics and Design
Circuits

Achievements

2016 Schulich Leader Nominee
2016 Diocese of Hamilton Award
2014 OECTA Award

Interests

- Football & Ultimate
- Hackathon culture
- Rock climbing
- 3D printing
- Woodcraft & wood burning art

Experience

Embedded System Software & Hardware Developer — **Co-op**
Tigercat Industries — Fall 207

- Spearheaded **computer vision** efforts in an agriculture automation project
- Designed and programmed a vision utilities package with **OpenCV** to detect and track color-specific objects with pinpoint accuracy
- Led research and development of a neural network for object recognition with machine learning via cuDNN and Caffe
- Sped-up image processing algorithms by implementing Nvidia CUDA-based GPU acceleration
- Designed and fabricated a prototype 2-axis gimbal for a water sprayer with digital communications between a main computer and a microcontroller

Database Development Intern — **Co-op**
Independant Electricity System Operator (IESO) — Winter 2017

- Programmed new functionalities into three **Access** databases
- Solved database issues on a regular basis with **VBA** and **SQL**
- Reduced corporate risk in a Tableau-transition initiative; accelerated by 90%

Projects

EasyAlexa3D — **Personal IoT Project**
github.com/mattromlewski/EasyAlexa3D — Ongoing

- Created a voice-interactive front end for **3D printers** using **Amazon Alexa**
- Programmed a repsonse algorithm in Node.js which called to a database
- Quickly learned and implemented Amazon Web Services, noSQL and APIs

SightSeer — **Personal Robotics Project**
github.com/mattromlewski/SightSeer — Ongoing

- Created a plan to analyze the 3D point-clound from a Kinect sensor on a Raspberry Pi computer
- Collaborated to design electronics layout
- Compiled OpenCV for c++ in an embedded linux environment

UnitedShare — **SpartaHack @ MSU**
devpost.com/software/unitedshare — February 2017

- Designed and built an **Android app** to raise awareness for the homeless
- Awarded **Best hack** for social good
- Worked effectively with three teammates in 36 hours

ShelfMate — **Mechatronics 100 Final Project**
devpost.com/software/shelfmate — December 2016

- Performed a full **engineering design process** to build a shelf-sorting **robot**
- Programmed precise movement with three degrees-of-freedom in **C**
- Created a **data structure** to model a physical shelf with coordinates
- Practised project management, technical report writing and presentations