Elizabeth Morrow

3A Mechatronics Engineering, University of Waterloo

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Technical Skills

- Strong coding skills in C, C++ and C# for applications and embedded systems development.
- Familiar with ARM and x86 Assembly, Java, Python, HTML/CSS, and MATLAB.
- Experienced in robotics and automation (Arduino, Raspberry Pi, MSP430).
- Familiar with electrical design and testing for embedded systems (Altium, AutoCAD).
- Bilingual (English, French), with excellent presentation and communication skills.

Recent Projects

2048 Game on ARM Cortex-M3 processor-based board

- Implemented 2048 game logic in C using RTX Real Time Operating System kernel. Leveraged multithreading and hardware interrupts for speed and responsiveness.
- Modified native graphics library in order to imitate desktop game experience with only 32KB RAM.

Work Experience

Software Engineering Intern – *Microsoft Corporation* Jan. 2016 – Apr. 2016

- Developed full IDE experience C/C++ toolchain for Linux and Raspberry Pi developers on Windows.
- Used SSH and SFTP for remote system access, GCC and GDB as compiler/linker/debugger back end. (C#)
- Designed and implemented authentication and remote connection manager interfaces using MVVM design pattern. (XAML/C#)
- Project release reached 5th most popular article on Hacker News.

Explorer Intern – *Microsoft Corporation* May 2015 – Aug. 2015

- Implemented Visual Studio debugger for Lua scripting language. Leveraged C# asynchronous named pipes, function detouring, C++ multithreading, and COM interfacing. (C++ and C#)
- Wrote hand rolled Lua lexer that was chosen as the best of 3 implementations. (C#)

Control Systems Design Intern – *MedAvail Technologies Inc.* Aug 2014 – Dec. 2014

- Developed phone handset testing system, including insulated enclosure and software. Used Fast Fourier Transforms to analyze signal and hardware quality. (C#)
- Saved company $15,000 (price of competing solution).
- Implemented multithreaded real time microcontroller diagnostic package converter. (C#)
- Wiring and electrical system layout. (AutoCAD)

Electrical Co-op – *Midnight Sun Solar Car Team* Jan. 2014 – Apr. 2014

- Firmware development (C). Developed CAN network diagnostic tools. (Python, C#)
- Soldered and tested battery and light control PCBs. (Altium)

Volunteer and Leadership Roles

Waterloo Engineering Society Sept. 2013 – Present

- Outreach Commissioner (Fall 2015)
- Student Teams Director (Spring 2014, Winter 2015)

Solar Car Design Team Sept. 2013 – May 2015

- Served as Electrical Team Lead. Held team meetings and contributed to electrical system design and integration.

University of British Columbia Lab Assistant Aug. 2012

- Performed experiments to test the potential of leukodepletion and DNA extraction from white blood cells as a method for detecting blood doping in athletes

Other Interests: Hockey, rock climbing, hiking, performing in musicals.