Elizabeth Morrow

3A Mechatronics Engineering

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Technical Skills

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

Recent Projects

2048 on ARMv7 Real Time System

- 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 C/C++ tool set for Linux and Raspberry Pi developers on Windows using GNU toolchain back end.
- Owned file sharing API between devices via SSH, remote invocation of GDB, command line interaction window, and remote system dependency checking. (C#).
- Designed and implemented authentication and remote connection manager interfaces using MVVM design pattern. (XAML/C#).

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

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

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. Saved company $15,000 (price of competing solution). (C#).
- Implemented microcontroller diagnostic package converter. Improved speed using hashing and multithreading to translate diagnostic messages in real time. (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.

Education

Candidate for Bachelor of Applied Science, Honors Mechatronics Engineering.
University of Waterloo

Relevant Courses: MTE 325 Microprocessor Systems and Interfacing, MTE 320 Power Electronics,
MTE 241 Real Time Systems, MTE 220 Sensors and Instrumentation

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