Aftab Narsimhan

Electrical Engineering

TECHNICAL SKILLS

**Programming:** C# • C • Java • Android • HTML / CSS / JS • Assembly (8051)

**Software Tools:** MS Visual Studio • Atmel Studio • Android Studio • Git / Perforce • Linux

**Embedded Systems:** Atmel, Arduino • Raspberry Pi • Altera • Smart Servo Motors

ACADEMIC & CO-OP STATUS

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| **Academic Program** | * Biomedical Electrical Engineering; 6 of 8 academic terms completed * Anticipated date of graduation: May, 2017 |

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| **Co-op Status** | * Completed 3/4 work terms; available for 4 months beginning May, 2016 |

CO-OP WORK EXPERIENCE

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| **Kardium Inc.**  ***Automation Engineer Co-op*** | **September, 2014 – September, 2015** |

* Created hardware and software solutions to automate the manufacturing processes involved with building the components of a medical catheter device
* Wrote the drivers for the board using Atmel or Arduino microcontrollers in C
* Used C# to create GUI applications that interfaced with the device and many APIs or supporting libraries
* Implemented databases using Microsoft SQL Management Studio and Entity Framework with C# to log data and keep track of calibrations/settings between multiple devices
* Developed several solutions using PID controllers, threading, timers / interrupts, SPI, thermocouples, watchdogs, filters, ADCs, USART communication
* Designed/updated PCBs using Altium, populated the boards through surface-mount soldering, and tested with standard electrical tools

TECHNICAL PROJECTS

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| **EC Turbo-Fan Helicopter**  ***Team Lead, Control System Lead*** | **January, 2016 – Present** |

* Designing a 2-Degree-of-Freedom (DoF) helicopter with all but the lift and yaw DoF mechanically constrained
* Developing a closed loop feedback system by implementing a PID controller within a microcontroller that interfaces with sensors to control the position of the helicopter
* Writing the firmware for the microcontroller in C++ and creating a GUI test interface in C# to allow for quicker and more efficient calibration, PID tuning and debugging
* Adding Bluetooth capabilities to the device to allow for wireless PID tuning and flashing of new firmware
* Creating an android app with a simulated joystick to allow for easy, wireless control of the helicopter

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| **Raspberry Pi Internet Monitor**  ***Personal Project*** | **January, 2016 – Present** |

* Developing a small embedded solution on a Raspberry Pi 2 in order to monitor the status of my home internet and alert me of connectivity issues, as well as to gain experience using Python
* Implemented a GUI to allow for easy customization of monitoring parameters, and hardware indicators (LEDs) for easy visual cues of internet status

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| **Smart Fall Detector**  ***nwHacks Hackathon*** | **March, 2015** |

* Prototyped a smart fall detector for safety of elderly patients in a care-home
* Developed an Android app which relays alerts sent from the fall detector (i.e. Myo armband) by Bluetooth
* Implemented a cloud-based backend storage (Firebase) which updates a central web portal monitored in real-time by hospital personnel based on data received by the Android app

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| **Electromagnetic Tether Robots**  ***Firmware Lead*** | **March, 2014 – April, 2014** |

* Worked with a group of 6 peers to design, build, program and test an autonomous robot (receiver) that follows another keypad controlled robot (electromagnetic beacon)
* Designed and programmed a state machine for the robots and implemented several commands such as parallel park with SPI using Assembly and C

VOLUNTEER WORK EXPERIENCE

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| **Vancouver General Hospital, Vancouver, BC**  ***Electronic Patient Data Transfer Solution*** | **January, 2016 – Present** |

* Prototyping a way to modernize a paper-based data transfer process between a doctor and patient after intubation procedures
* Implementing the data transfer through the use of a QR code generated from a web portal, which can then be scanned by an Android app on the patient’s phone in order to generate an electronic copy

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| **Toronto General Hospital, Toronto, ON**  ***Research Assistant / Engineering Consultant*** | **July, 2013 – August, 2013** |

* Worked meticulously and independently to learn the complex aspects of a portable ex vivo liver perfusion device being developed, within two weeks, to further my understanding of the device and how to simplify its components
* Demonstrated initiative beyond expectation by producing the outline of a new prototype, with modifications that makes the device more portable, earning me a recommendation letter from my supervisor

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| **Agilent Technologies, Santa Clara, CA**  ***QA Intern*** | **July, 2010 – August, 2010** |

* Worked with the R&D Team in the automation and robotics department, classifying and validating up to 20 software defects a day to improve robustness and stability of the Bravo Liquid Handling System
* Learned VWorks automation and the Bravo instrument software independently within a few days and used them for debugging purposes
* Documented and organized findings using an excel spreadsheet and submitted to the supervisor for further functional improvement of the Bravo instrument

EDUCATION

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| **University of British Columbia**  ***Bachelor of Applied Science – Electrical Engineering***   * Dean’s Honour List (2014 – 2015) * Credits: 86 Cumulative Grade: 86.2% | **September, 2012 – Present** |

CLUBS AND SOCIETIES

**UBC Open Robotics**

**APEGBC Member Advantage Program for Students (MAPs)**

**UBC Biomedical Engineering Student Team**

**May, 2014 – Present**

**September, 2013 – Present**

**March, 2014 – March, 2015**

ACTIVITIES AND INTERESTS

* Coding, gaming, reading
* Rock climbing, badminton, Ultimate Frisbee, exercising, travelling
* Technology that has a huge impact / influence on society
* Learning languages