Aftab Narsimhan

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http://www.aftabnarsimhan.com **|** http://www.github.com/aftabn

TECHNICAL SKILLS

**Programming:** C# • C • MySQL • Android • Java • C++ • VHDL • HTML / CSS / JS

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

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

EDUCATION

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| **University of British Columbia**  ***Bachelor of Applied Science – Electrical Engineering***   * Expected Graduation: 2017 * Dean’s Honour List (2014 – 2016) | **September, 2012 – Present** |

WORK EXPERIENCE

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| **Tesla Motors Inc., Palo Alto, CA**  ***Software Engineering Intern*** | **May, 2016 – Present** |

* Aided the development of a new generic test platform for the Model III ECUs by creating a C# GUI application for: creating test plans to be consumed by a sequencer during testing for each controller, easily displaying test results that were stored in a MySQL database, and graphing results and showing trends across several parameters
* Upgraded a legacy application by increasing the efficiency of SQL queries and properly indexing which resulted in a performance boost of > 100000 times
* Brought up parts of the Model III ECUs which entailed SMT soldering, analyzing circuits and characterizing behavior using standard electrical equipment, and performing calculations for design adjustments accordingly

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| **Kardium Inc., Burnaby, BC**  ***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
* Designed/updated PCBs using Altium, populated the boards through surface-mount soldering, and tested with standard electrical tools
* 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

TECHNICAL PROJECTS

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| **Turbo-Fan Helicopter**  ***Team Lead*** | **January, 2016 – March, 2016** |

* Designed a Bluetooth controlled, 2 DoF helicopter with all but the lift and yaw DoFs mechanically constrained
* Developed a closed loop feedback system by implementing a PID controller on an ATmega328P microcontroller
* Wrote the firmware for the microcontroller in C, and created a GUI application in C# using WPF, with real-time graphing to allow for quick and easy PID tuning
* Implemented a database for storage of past PID tuning session data using C# with Microsoft Entity Frameworks
* Designed and developed the PCB electronics for integrating the sensors, motors, and microcontroller using Altium
* Created an Android app (using Bluetooth and threading) with a simulated joystick and real-time graphing to allow for easy, handheld control of the helicopter

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| **Personal Portfolio Website**  ***http://www.aftabnarsimhan.com*** | **August, 2015 – Present** |

* Developed a personal website from the ground up using HTML, CSS, JS and PHP with the Bootstrap framework in order to have a more prominent online presence and learn the basics of web development
* Learned how to use Adobe Photoshop and Illustrator CS6 in order to create my own graphics

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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 - Advisor*** | **January, 2016 – Present** |

* Developing 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

CLUBS AND SOCIETIES

**UBC Open Robotics**

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

**UBC Biomedical Engineering Student Team**

**May, 2014 – September, 2015**

**September, 2013 – Present**

**March, 2014 – March, 2015**

ACTIVITIES AND INTERESTS

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