Razi Murshed

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Education

Bachelor of Engineering in Honours Electrical Engineering
Internship Program **Start Date: September 2012**
McGill University, Montreal, QC, Canada **Expected Graduation: December 2016**
CGPA: 3.71

Programming and Technical Skills

- Operating Systems: Windows, Unix, Linux (SUSE , Debian, Redhat)
- Microsoft Office Tools: Word, Excel, PowerPoint, Visio, Access, Project
- Programming Languages: C++, C, Java, Perl, MATLAB, Python, ARM and MIPS Assembly Language
- Database Management : SQL, PostGreSQL
- Scripting Languages: Bash, Batch, JavaScript, SystemTap and Perl
- Development Tools: Ant, Maven, Git, Tomcat, VMWare, Eclipse, Keil, Jenkins, Visual Studio, Subversion, Fitnesse
- Simulation and Analysis Tools: LogicWorks, QT Spim, Simulink, Altera Quartus II, Wireshark
- Digital Circuit Design: VHDL, Digital, Analog and FPGA circuit design and analysis.
- Analog Circuit Design: PSPICE, Oscilloscopes, Multimeters, Probes, and Frequency Response Analyzers.

Work Experience

Software Engineer Co-op **May 2016 – August 2016**
Matrox, Dorval, Canada

- Developed and tested new software features and functionalities for the Windows Display wall team at Matrox.
- Programmed, tested and analyzed software in C++ and on Windows OS.
- Used Visual Studio, Subversion, Jenkins and JIRA to write and maintain source code.
- Created a test framework using various graphics APIs such as DirectX 9, 11 and 12.
- Used the test framework to carry out performance analysis of existing software accompanying Matrox graphics cards.
- Identified and analyzed possible sources of latency and suggested possible improvements.
- Miscellaneous documentation and team activities.

Software Developer Co-op **January 2015 – August 2015**
Ericsson Canada Incorporated, Montreal, Canada

- Developed software for the Authentication Federation Gateway team using Agile SCRUM and later Kanban.
- Used C++ and Java to write source code for product and Java to develop internal test framework.
- Used Bash, JavaScript and Perl for scripting.
- Developed in a SUSE Enterprise Linux environment using tools such as Eclipse IDE, Maven, Tomcat, Jenkins etc.
- Used GIT to maintain and edit source code repositories.
- Carried out troubleshooting and lifecycle analysis on the product.
- Worked with several Internet and Telecommunication standards and protocols.
- Prepared Virtual Machines in VMWare for system tests and executed tests.
- Carried out network analysis using Wireshark.
- Miscellaneous documentation, agile and team activities.

Undergraduate Researcher **May 2014 – August 2014**
McGill University Power Engineering Lab, Montreal, Canada

- Created a complete set of design specifications for a Solar Charging station for Plug-in Electric Vehicles.
- Carried out simulations using MATLAB and Excel on the energy requirements and output of the station.
- Determined power electronic interface solutions, implementing technologies to optimize system's energy output.
- Implemented smart meters and intelligent energy management algorithm as control for the system.
- Created circuit components and wiring schematics using Visio.
- Created business case with scenarios determining the most profitable and sustainable design.

Grader **January 2014 - April 2014**

McGill University Department of ECSE, Montreal, Canada

- Graded assignments and midterms for the course "Introduction to Computer Engineering".
- Gave feedback to students regarding their submitted work.

Project Experience

Honours Thesis: Measuring Processing Times for Packets in the Linux Kernel **January 2016 - Present**

- Designed experiments to measure time taken to process network packets by the Linux kernel in Ubuntu 14.04 OS.
- Studied and analyzed the Linux network kernel stack extensively to understand the paths taken by various packets.
- Designed experiments to measure timings for various protocols such as TCP/IP, UDP and SCTP.
- Modified experiments to account for wired, wireless and local networks.
- Carried out analysis in various environments such as a bare metal machine, virtual machine and cloud.
- Used Matlab, Excel and Python to analyze the data obtained.
- Authored a thesis documenting findings and proposed improvements from observations.

Ericsson Jack Bauer Challenge Hackathon **April 2015**

- Developed a Smart Access system to authenticate cellphone users to access secured services and privileges using their smartphones in 28 hours.
- Built an android app for the client to collaborate with the open source mobile connect SDK in order to authenticate the end user.
- Used Android Studio and Android SDK to develop the client app.
- Used a raspberry Pi to complete end to end integration of system.

Project of Microprocessor Systems, Montreal, Canada **September 2015 - December 2015**

- Used C and ARM to program an ARM Cortex M7 microprocessor to create an indoor dead reckoning system.
- Wrote low level drivers for keypads, thermostats, accelerometers, gyroscopes, LCD displays and motors.
- Used Keil uVision to develop and debug the C API to run the system.

Project of Operating Systems, Montreal, Canada **September 2015 - December 2015**

- Created parts of a Linux like operating system using C and in a Linux environment.
- Coded and tested a simple shell, File system, printer spooler and memory allocation system.

Project of Electronics, Montreal, Canada **September 2015 - December 2015**

- Used PSPICE to model and simulate analog circuit components.
- Designed, analyzed and tested the circuit for several amplifier configurations.
- Built and tested circuit on a NI Elvis system and analyzing using tools such as oscilloscopes, multimeters and frequency response analyzers.

Project of Digital System Design, Montreal, Canada **September 2014 - December 2014**

- Created the design of a digital system with a user interface that operates a display for a rowing machine.
- Used VHDL for hardware description and Altera Quartus II for schematic design and simulation.
- Designed, simulated and tested constituent output displays, CPLDS, FPGA logic units in the microprocessor design.

Project of Design Principles and Methods, Montreal, Canada **January 2014 - April 2014**

- Designed a software system to operate an autonomous robot using Java and Eclipse.
- Designed a communication interface and the protocol for connecting two NXT components via Bluetooth and RS-232.
- Generated API for Software, authored software design document, devised unit and functional test programs.

Design Project for Computer Engineering, Montreal, Canada **September 2014- December 2014**

- Researched and created design specifications for a Navigational Guide System for Blind Users.
- Created a prototype app in Android SDK using Java in order to modify Operating System to accommodate needs of users.

Volunteer and Extracurricular Activities

- Team lead at JAAGO for Hurricane Relief Operation in Bangladesh
- Volunteer at BSMMU hospital as office clerk.
- Programming, Music Composition and Recording, Playing keyboards, Soccer, Table Tennis, Swimming.