Andrew Russell
4A Software Engineer

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TECHNICAL SKILLS

Software Development
- Strong understanding of developing device drivers for different types of hardware
- Extensive experience of audio and image signal processing in C/C++ and Matlab
- Good knowledge of computer graphics programming techniques

Web Development
- Very strong client-side web application development skills (HTML, JavaScript and CSS)
- Familiar with a number of server-side languages including Google Go, JavaScript (node.js) and Java

EDUCATION

University of Waterloo; Sep 2008 - Apr 2013
Candidate for Bachelor of Software Engineering, Honours Software Engineering

Speechboard (Design Project)
- Automatic transcription application for meetings, with a large focus on simplicity for users
- Developing an algorithm that analyzes voice data to determine who is speaking at what time
- Algorithm analyzes frequency spectrum of voice and creates a voice print for each speaker

Computational Vision (CS 484)
- Learned digital signal processing techniques for image processing
- Developed a program for recognizing how images go together and composed the images into a panorama
- Implemented a panoramic stitching program in Matlab

Introduction to Computer Graphics (CS 488)
- Lectures gave a broad overview of many graphics concepts
- Developed a final project implementing flocking, L-System, terrain erosion and water rippling systems

WORK EXPERIENCE

Research Intern, Primal Inc., Waterloo, Ontario; Sep - Dec 2012
- Investigated a new algorithm for scoring web content against concepts
- Designed a new algorithm for converting user queries into concepts and then synthesising new concepts
- Researched combining synthesis results together to store user intent over multiple queries
- Will be listed as a collaborator on multiple patent applications

Software Engineer Intern, Microsoft Corp., Redmond, Washington; Jan - Apr 2012

- Ported a virtual surround sound processing library from Windows to an Xbox 360 device driver
- Improved CPU performance by over 750x and memory usage by over 5200x with help from a code profiler
- Worked with testing engineers to ensure code quality and program managers to ensure that the code met the spec

Software Engineer Intern, Google Inc., Mountain View, California; May - Aug 2011

- Added accessibility for low-vision and blind users to the Pepper Plugin API (PPAPI)
- Modified existing Native Client applications to work with the new PPAPI version
- Added accessibility to existing Native Client applications

Software Engineer Intern, Sybase iAnywhere, Waterloo, Ontario; Sep - Dec 2010

- Researched the possibility of replacing native mobile applications with web applications
- Developed a JavaScript library to create native quality mobile web applications
- Cloned a CRM native application as a web application, matching performance

Software Engineer Intern, Qualcomm Innovations Center, San Diego, California; Jan - Apr 2010

- Worked with the Symbian OS Multimedia Audio Team
- Designed and developed a physical device driver for the Windows emulator
- Wrote a debugging tool to log running processes on the target device

Ground Segment Intern, Canadian Space Agency, Saint-Hubert, Quebec; Apr - Aug 2009

- Launched an internal development application using Java, JSP and JavaScript
- Wrote SQL queries for Oracle 10g Database

PERSONAL PROJECTS

Source code for most personal projects can be found at: github.com/deadheadrussell

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OTHER INTERESTS

Music

- Perform, compose and record music on various instruments
- Have played piano in multiple musical theatre performances
- Instruments include the guitar, piano, upright bass, drums, vocals and mandolin

Sports

- Class athletic representative, organizing teams, liaisoning with the league and developing plays
- Captain of soccer, volleyball, ultimate frisbee and slo-pitch intramural teams
- Played many competitive sports including allstar teams in soccer and baseball