

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
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EDUCATION

University of Waterloo; Sep 2008 - Apr 2013

Candidate for Bachelor of Software Engineering, Honours Software Engineering

Second Screen (Design Project)

- Developed an application for Android that identifies what TV you are watching
- Modified the open source audio fingerprinter Echoprint to return where the match occurs in the source audio
- Designed the back end database that handles metadata for TV shows

Research Project (SE 499)

- Investigated the use of the Stockwell transformation in audio fingerprinting
- Modified Codegen for Echoprint to use either the Stockwell transform, or the already existing filter bank analysis
- Performed multiple tests against both algorithms and analysed the results

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

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