Andrew Au

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EDUCATION

Master of Applied Science in Computer Engineering (GPA 3.75) Jan 2011 – Jan 2013
Simon Fraser University, Burnaby, BC, Canada
Thesis: "*Development of Multiview Image/Video Stitching Systems*" (Supervisor: Prof. Jie Liang)

Bachelor of Applied Science in Electronics Engineering (Honours) May 2005 – Dec 2010
Simon Fraser University, Burnaby, BC, Canada
Thesis: "*Development of an Interactive Multiview Video Processing System*" (Supervisor: Prof. Jie Liang)

WORK & RESEARCH EXPERIENCE

Front End Developer, *iQmetrix*, Vancouver, BC Sept 2013 – Present
- Bridging the design and implementation of RQ, iQmetrix's industry-leading retail management software
- Develop an interactive touchscreen prototype for clothing retail stores

Software Developer, *Thinkingbox*, Vancouver, BC Dec 2012 – Sept 2013
- As part of a small but growing team of engineers and designers, I developed apps for Windows 7/8 (C#/.NET), iOS (Objective-C), Android (Java), as well as websites (HTML5/JavaScript/jQuery)

Developer/Research Assistant, *Multimedia Communications Lab* (SFU) Sept 2010 – Jan 2013
- Developed *Ztitch*, a Windows Phone application (C#/Silverlight/JavaScript) for creating, navigating, and sharing 360° photo panoramas; accumulated over 200k downloads and handled thousands of uploaded data

MITACS Accelerate Internship Cluster Program (supported by Nokia) May 2012 – Sept 2012
- Researched methods to optimize and improve image feature detection on mobile devices
- Published techniques to aid panorama construction and generalized *Ztitch* to support user-generated videos

NSERC Research Assistant, *Multimedia Communications Lab* (SFU) May 2010 – Sept 2010
- Created an award-winning multiview video system (C#/Silverlight) to allow multiple videos be positioned and oriented simultaneously in a 3D space, by applying state-of-the-art computer vision algorithms

Software/Firmware Test Engineer, *Sierra Wireless*, Richmond, BC Sept 2009 – May 2010
- Configured wireless communication test sets (Agilent 896, Anritsu 8470A, & CMU 200) to measure throughput speeds over different simulated network bands

Software Test Engineer, *Nokia*, Burnaby, BC Jan 2009 – Sept 2009
- Automated tests on Nokia devices for nightly software builds and software releases
- Created basic widgets using JavaScript to test Nokia's Web Runtime library (white box tests)

ACHIEVEMENTS

- Best final project award in the graduate course, *Image Synthesis* 2011
- **1st Place in the *BCNET Digital Media Challenge*** **2011**
- **Round-1 Winner in *The Great Apportunity* hosted by Microsoft** **2011**
- NSERC Undergraduate Research Award 2010

PUBLICATIONS / DEMOS

A. Au, and J. Liang, "*Ztitch: A Mobile Phone Application for Immersive Panorama Creation, Navigation, and Social Sharing*," *IEEE Int'l Workshop on Multimedia Signal Processing (MMSP'12)*, Banff, Canada, Sept. 2012

A. Au, and J. Liang, "*Ztitch: A Mobile Phone Application for 3D Scene Creation, Navigation, and Sharing*," *ACM Multimedia (MM'11)*, Arizona, USA, Dec. 2011, pp. 793-794.

A. Au, and J. Liang, "*Veaver - An Interactive Multiview Video System*," *2011 BCNET Conference*, Vancouver, Canada, May 2011 **(Demo - Digital Media Challenge 1st Place Award)**

SKILLS

Languages	C#, Obective-C, Java, C++, C, JavaScript, Python, HTML/CSS, SQL
Tools	Visual Studio, Expression Blend, Xcode, MATLAB, PBRT, SVN
Standards/Packages	.NET, Silverlight, WPF, WinRT, OpenGL, web APIs (Facebook, Flickr)
Others	CLI, object-oriented approaches, Linux, VHDL, Dreamweaver, GIMP/Photoshop
Hardware	Programming FPGA boards, and designing practical devices using op-amps, analog integrated circuits, active filters, and comparators

PROJECTS

iOS Video/Photo Filtering Application – Development Team (Thinkingbox) May 2013 – Aug 2013

- Developed iOS app *Timbits Hockery Camera*, using Objective-C and the GPUImage framework, allowing users to apply different filtering effects, music, and caption to their videos and photos

Ztitch and Ztitch+ (www.ztitch.com) – Multimedia Communication Lab (SFU) Jan 2011 – June 2012

- Developed Windows Phone 7 app *Ztitch* for creating, navigating, and sharing 360° spherical panoramas
- Implemented FAST-9 detection for real-time visual tracking (source codes available at www.ztitch.com)
- Devised a fast color-balancing and blending algorithm to minimize the seams between images, and a technique for efficiently eliminating the gap or overlap between the two ends of the 360° panorama

Physically Realistic Rendering of Weathered Metal – Image Synthesis (SFU) Sept 2011 – Dec 2011

- Developed a C++ plug-in for PBRT (Physically Based Rendering Toolkit) for rendering physically realistic weathered metal as part of the final project in the graduate course *Image Synthesis*
- Awarded best project of the class by representatives from Electronics Art and Radical Entertainment

Multiview Video/Image Systems – Multimedia Communication Lab (SFU) May 2010 – Dec 2010

- Developed a Silverlight-based multiview video application, *Veaver*, for the desktop and Windows Phone 7
- By orienting and positioning multiple videos inside a 3D space using ASIFT features and bundle adjustment, the system can view multiple videos at once, *e.g.* surveillance videos

Mobile Login using Eigenfaces – Capstone Engineering Project (SFU) May 2010 – Dec 2010

- Led a team of two others in designing and implementing a complex system that would allow mobile users to log into an online account using facial recognition (Eigenfaces) and spoken keyword detection

Verification Automation – Software Test Team (Nokia) Jan 2009 – May 2009

- Created JavaScript-based applications for testing nightly software builds and verifying errors
- Automated the entire process of collecting nightly software builds, installing them onto Nokia devices, running my set of applications on the devices, and distributing the test results to developers every morning