CRAIGSPENCE

e. craigspence0@gmail.com m. 020 400 34557 a. 19a Kensington Street, Wellington

Profile:

I am the kind of person who thrives on challenges and grasps any opportunity to think differently. I love being in an environment that allows me to improve my skills, solve problems, deliver results and learn. I always aim to produce work at the highest level possible, and pride myself on my flexibility and adaptability, great teamwork skills and ability to take initiative.

Education:

2013 – present:

Master of Science: Computer Graphics - Victoria University of Wellington

Currently working under the supervision of Dr. Taehyun Rhee on problems relating to the optimisation of rendering systems based on observations of the human visual system.

2009 – 2012:

Bachelor of Engineering: Multimedia Systems (First Class Hons) – Massey University

Multimedia Systems Engineering involves the integrated study of electronics, computer science, software engineering, signal processing and communications technology. This is blended with subjects in computer graphics, multimedia content creation and relevant management studies.

Degree Highlights:

- Advanced Computer Systems (A+)
- Programming Languages (A+)
- Digital Audio Media (A+)
- Multimedia Systems Engineering (A+)
- Practicum III - Weta Digital (A+)
- Multimedia Content Creation (A+)
- Digital Multimedia Fundamentals (A+)
- Computer Science Fundamentals (A+)
- Practicum II - MiniMonos.com (A+)
- Human-Computer Interaction (A)
- Applied Multimedia Signal Processing (A)
- Technological Mathematics (A)

Awards:

Pro Vice-Chancellor's Merit List (2012)

Victoria University of Wellington Masters (by thesis) Scholarship 2013

Recent Projects:

Honours project (and ongoing): *A Web-based Distributed Ray-tracer (A)*

The focus of this project is to implement a rendering system that can perform tasks on multiple web-capable devices simultaneously using the common denominator of a web-browser running **JavaScript**. The ideal outcome will be reduced effort for computer-graphics artists to create complex, realistic computer-generated images by spreading the workload across devices they already own. This project is entirely written in **CoffeeScript**, using the **Express** framework for **node.js** on the server, the **jQuery** and **Underscore** libraries on the client, and **qUnit** for unit-testing.

Other University projects:

- 2D and 3D versions of Asteroids using the XNA Game Development Framework
- A tetris-playing artificial intelligence which applies constraint satisfaction problem solving techniques. Uses a genetic algorithm to constantly improve the set of decision heuristics.
- An artifical intelligence opponent for two-player 4x4x4 tic-tac-toe using alpha-beta pruning, written in JavaScript
- The first ever pure JavaScript chromatic tuner using the Web Audio API
- A quantum-computer simulation which demonstrates the operation of Deutsch's Algorithm, the Deutsch-Jozsa Algorithm, Grover's Algorithm, and Shor's Algortihm

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Work Experience:

November 2012 – present: Trade Me, Front-end Developer

Trade Me is New Zealand's largest website. As a developer in the Touch Squad, I work on Trade Me Touch, which is designed to specifically cater for mobile devices. This involves dealing with the many challenges involved with providing a valuable experience across a wide range of devices and operating systems/browsers.

- Working as part of a team with a focus on releasing features quickly, using Agile processes with two-week sprints.
- Reducing technical debt through refactoring and working to improve code-coverage.

November 2011 – February 2012: Weta Digital, Code Intern

Weta Digital is a world-renowned Digital Visual Effects company. This role primarily involved the continued development of **wtTestSuite** - the internal Weta Digital unit-testing and regression-testing suite - and its preparation for release as an open-source tool.

- Bug fixing, general refactoring and creating new features withing the **Python** codebase
- Focus on capturing performance information during testing and the development of a **PHP**/**jQuery**/**CoffeeScript** web interface for visualising and manipulating the data using the **Google Charts API**
- Prepared the project for open-source release by refactoring the code into two parts: a new public project (named **Mango**) that provides most of the functionality, and a private Weta project that references Mango, containing additional specialised functionality.

Referees available on request