

# Aaron Craig's CV

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## CONTACT INFO

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24 Mein Street  
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## SKILLS

**Languages:** Java, C, Python, Haskell, Prolog, SQL, Bash scripting, XML, JSON, C#, Latex, Alloy, UML, LTSA.  
**Libraries & Frameworks:** JUnit, pandas, matplotlib, numpy, curses, OpenGL, XStream, Berkeley Socket API, Swing, Unity.  
**Protocols:** HTTP, DNS.

## JOB HISTORY

**New Zealand Registry Services**, Wellington.

*Research Intern*

Oct 2014 - Mar 2015

- Analysis and summary of DNS data using pandas, matplotlib.
- Detection and classification of botnet domains using clustering techniques.
- Helped gather and verify data used to generate a map of the NZ internet's routing topology.

**Victoria University**, Wellington.

*Sessional Assistant & Tutor*

Mar 2014 - Current

- Marking tests and assignments; invigilating.
- Running tutorials, labs, and helpdesks.
- Classes tutored: Intro to Computer Science; Engineering Modelling & Design; Data Structures & Algorithms II; Formal Foundations of Programming.

**Converga Ltd.**, Petone.

*Business Processing Clerk*

Nov 2013 - Mar 2014

- Data entry and verification.
- Sorting files by hand. (I did this using radix sort)

**Target Furniture**, Porirua.

*Temp, Storeperson.*

Nov 2010 - May 2013

- Furniture removal, delivery, assembly, and repair.
- Managing inventory.
- Driving forklift.
- Training temps.
- Assisting and greeting customers.

**Visualisations.** At NZRS I helped verify data used to generate a map of the New Zealand internet. I have implemented several interactive algorithm visualisations (A\*, Kruskal's, Knight's Tour, KNN).

**Computer Science Education.** Motivated by my experiences as a student and a tutor, I am writing an introductory "textbook" of computer science. It covers a wide range of subjects: low-level and high-level, mathematics, theory, application, philosophy. My opinion is that existing textbooks are too narrow in one area which leaves students with a poor understanding of the big picture.

## INTERESTS & PROJECTS

**Natural & Programming Languages.** I'm interested in the logical structure of languages. This includes: compilers, programming language design, and natural language processing (NLP). I made several NLP utilities at NZRS. I've compiled several word and n-gram corpora for Maori and NZ English. I have my own SAT solver I've been tinkering with. At NZRS I did research into detecting botnets by classifying domain names. As part of that I gave a presentation at the 2015 New Zealand Internet Research Forum.

**Game Development.** I am working on a 2d game engine in Java, built atop OpenGL. I've worked on several other small games and attend Pixeljam (a Wellington-based gamejam contest) yearly.

## EDUCATION

**Victoria University of Wellington**, New Zealand.

- STAR Programme 2011
- BA Linguistics & Philosophy 2012
- BSc Computer Science & Mathematics 2013 - Current

**Tawa College**, New Zealand.

- NCEA Level 3 (Merit endorsement).

## SCHOLARSHIPS & AWARDS

**Victoria University of Wellington**

- Victoria Achievers Scholarship 2012, 2013

**NZQA**

- Outstanding English Scholarship 2011

**Tawa College**

- Katherine Mansfield Award (English) 2011
- Leanne Dixon Cup (History) 2011

## ABOUT ME

I was born in Porirua and live in Wellington. My ancestors are Pakeha (Scottish, English) and Maori (Muaupoko, Ngati Kahungunu). I like reading history, philosophy, and literature. I did amateur boxing for about two years but nowadays just like to watch.

## REFERENCES

Available upon request.