Aaron Craig's CV

CONTACT INFO	Email: aaroncraig@protonmail.ch Website: `github.com/craigthelinguist`	20D Portland Crescent Thorndon, Wellington

SKILLS

Programming Languages: Java, C, Python, Prolog, Haskell, SQL
Modelling Languages: Alloy, UML, LTSA, Isabelle
Markup Languages: Latex, Markdown, JSON, XML
Libraries & Frameworks: JUnit, pandas, matplotlib, numpy, curses, OpenGL, XStream, Berkeley Socket API, Swing, Unity
Protocols: HTTP, DNS

JOB HISTORY

Victoria University, Wellington
Research Assistant   Oct 2015 – Current
- Contributed to the Wyvern interpreter: `github.com/wyvernlang/wyvern`
- Developed a type system for effect inference in record calculi.
- My supervisors are *Alex Potanin* and *Jonathan Aldrich*.

New Zealand Registry Services, Wellington
Research Intern   Oct 2014 – Current
- Analysis and summary of DNS data with pandas, matplotlib.
- Detection and classification of botnet domains using clustering techniques.
- Gather, verify, analyse routing data for generating maps of NZ internet.
- Natural language processing on domain names.

Victoria University, Wellington
Sessional Assistant & Tutor   Mar 2014 – Oct 2015
- 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.
- Greeting and assisting customers.

INTERESTS & PROJECTS

Natural Language Processing. One of my dreams is to develop and improve algorithms for recognising and producing human language. I have made several corpora for Māori and NZ English. At NZRS I looked at detecting botnet activity in DNS by classifying domain names. As part of that I gave a presentation at the 2015 NZ Internet Research Forum.

Programming Languages. Exploring the space of formal languages helps shed light on the mysteries of natural languages. Furthermore, the role of language in software development is critically underappreciated. I want to develop expressive, safe ways for programmers to write software. I'm a contributor to the Wyvern project and especially interested in type systems and static analysis.

Visualisations. At NZRS I helped verify data used to generate a map of the NZ internet. I've written several interactive visualisations for algorithms (A*, Kruskal's Knight's Tour, KNN), cellular automata, and Turing machines. These are all much easier to explain in pictures than in words or mathematical formalism, which can be cumbersome and unintuitive.

Education. I would like to see NZ education offer more in the way of computer science and logic for high school students and would be excited to work towards such goals. I like the idea of using history-themed games to convey the geopolitics of an era.

Game Development. Each year I attend Pixeljam, a 48hr gamejam in Wellington. Over the years we've made several flavours of game such as: a lane-runner, a Mario-style platformer, and a 3d horror game.

EDUCATION	**Victoria University of Wellington**, New Zealand	
	• STAR Programme	2011
	• BA Linguistics & Philosophy	2012
	• BSc Computer Science & Mathematics	2013 – Current
	• BSc Hons. Computer Science	2016 – Current
	Tawa College, New Zealand	
	• NCEA Level 3 (Merit endorsement)	2011

SCHOLARSHIPS & AWARDS	**Victoria University of Wellington**	
	• Victoria Achievers Scholarship	2012
	• Dean's List	Current
	Tawa College	
	• Katherine Mansfield Award (English)	2011
	• Leanne Dixon Cup (History)	2011
	• NZQA Outstanding English Scholarship	2011

LANGUAGES	English
	Māori (Elementary)

ABOUT ME   I was born in Porirua and live in Wellington. I like creative writing and reading history, philosophy, and fiction. For two years I boxed as an amateur but nowadays just like to watch. My tribe is Muaūpoko, in Horowhenua.

REFERENCES   Available upon request.