# Zachary Forman

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## Work Experience

- **Language Confidence**
  *Software Engineering Intern* *July 2016 – August 2016*
  - Developed supervised and unsupervised neural networks for classification and regression of audio.
- **Google Sydney** **Chrome**
  *Software Engineering Intern* *November 2015 – February 2016*
  - Significantly increased the determinism of Chromium builds.
  - Designed and implemented a tool for investigating Chromium builds.
- **Google Sydney** **Drive**
  *Software Engineering Intern* *November 2014 – February 2015*
  - Designed and implemented an Android application.
  - Adapted a pretrained neural network for image recognition to a new task, achieving 94% accuracy.
- **School of Computer Science** **Adelaide University**
  *Casual Teaching* *August 2014 – present*
  - Taught first year students fundamentals of CS and programming in tutorials, practicals and workshops.
- **AutoID Labs** **Adelaide**
  *Summer Intern* *December 2013 – March 2014*
  - Built and helped design a C++ stream processor that interfaced with pre-existing middleware and machine learning algorithms to generate a stream of predictions.
  - Built a visual C♯ application to interface with RFID readers and provide a stream of tag reports.

## Leadership

- **President of Computer Science Club**
  *Adelaide University* *November 2013 – November 2015*
  - Encouraged a culture of excellence and diversity within the club, contributing to a significant number of club members (8+) getting internships at leading tech companies, including Google and Microsoft.

## Projects

- Intelligent Codebase Search
  - Implemented a fast mmap'd trie that reduced prefix search latency from order of $10^{-1}$s using sqlite's search to order of $10^{-6}$ seconds.
  - Implemented an approximation of a C++ parser in C++ to improve runtimes to 5s from 24h using libclang's python bindings.
  - Used spaCy to implement natural language processing for task extraction.

## Core Technical Skills

| Language | Years Experience | Technology | Years Experience |
|---|---|---|---|
| C++ | 5 | SVN | 5 |
| C | 4 | LaTeX | 4 |
| Bash | 4 | Git | 3 |
| Java | 3 | Android | 0.5 |

Github & Projects github.com/ZacharyForman

- Binary Matcher
  - Tool for analyzing binaries, and potentially doing clever binary diffing.
  - Learned about ELF file format and how binaries are run on Linux.
- net
  - C++ wrapper of BSD sockets, and several other utilities for code that interacts with the Internet
  - Learned more about BSD sockets, and experimented with API design.
- cpu
  - Instruction architecture simulator for the DLX architecture.
  - Improved my C programming ability and consolidated my knowledge of DLX.
- doc2vec
  - Used gensim to experiment with the doc2vec algorithm.

## Education

- **Adelaide University**
  *Bachelor of Engineering (Honours) (Software Engineering)* *2013 – Present*
  Expected Graduation: November 2016
  - GPA: 6.6/7.0
  - Recipient of Adelaide University Undergraduate Scholarship for outstanding academic merit.

## Selected key courses

- Artificial Intelligence (2014 s1) High Distinction
- Advanced Algorithms (2015 s1) Distinction
- Computer Vision (2015 s1) Distinction
- Evolutionary Computation (2015 s2) High Distinction
- Introduction to Statistical Machine Learning (2015 s2) High Distinction
- Distributed Databases and Data Mining (2016 s1) High Distinction
- Mining Big Data (2016 s2) High Distinction

## Miscellaneous

- Competitions
  - Google Code Jam 2013-2016 (Qualified)
  - ICPC South Pacific Regionals 2016
  - ICPC South Pacific Divsionals 2013-2016 ($n^{th}$, $3^{rd}$, $2^{nd}$, $1^{st}$ on site)