

Will Cashman

Software Engineer

Research Projects

Honours Thesis - Polynomial Multiplication Algorithms

The Australian National University

2020

- A study of the most popular practical and theoretical polynomial multiplication algorithms
- Developed the nPoly open source Rust library for polynomials that implements several of the algorithms studied with a focus on performance.

Post-Quantum Cryptography - NTRUEncrypt

The Australian National University

2019

- Guided research into the NTRUEncrypt Public Key Encryption system for post-quantum cryptography.
- Implemented the NTRUEncrypt cryptosystem in Python, and developed a lattice-based attack in Magma.

Conferences

Maple Conference - Presenter

Virtual

2020

- Rust for developing fast parallelised Computer Algebra Systems
- Demonstrated the suitability of the Rust programming language for implementing complex Computer Algebra systems which prioritise speed without sacrificing extensibility and memory safety.

Work Experience

TikTok - Go Software Engineer

Shenzhen, CN

Aug. 2021 - Present

- Follow an agile release train to design and develop core CI/CD capabilities for company-wide release platform in Go.
- Lead the integration of a competing internal product. Perform system integration, developed interactive cross platform data migration tool, and seeked and resolved user issues.
- Actively engaged with users to seek feedback and resolve obstacles, results 85% user retention rate.
- Used Python to perform system migrations, automate repetitive tasks, and SQL database maintenance.

Countersight - Full Stack Software Engineer

Canberra, AUS

Jan. 2021 - Jul. 2021

- Lead a team of two engineers using Agile methods to develop a React/NodeJS project with GitLab and Jenkins test validation.
- Automate deployment and maintenance of company email servers, Zabbix monitoring, and DNS servers using Ansible and Jenkins, and further integrating the services into the ELK stack.

The Australian National University - Workshop Demonstrator

Canberra, AUS

2019 - 2020

- Lead tutor for undergraduate algorithms course. Ensured comprehensive learning experience by leading online forum discussions, designed weekly student workshops as well as course assignments.
- Workshop demonstrator for Distributed Systems and ARM assembly programming courses.

Personal Information

E-mail: wcashman1351@gmail.com

GitHub: [wlcsn](#)

LinkedIn: [Will Cashman](#)

Computer Skills

Go

Python

JavaScript (NodeJS/React)

Docker

MySQL

Git/GitHub

Rust

Latex

GNU Troff

Bash

Languages

English *Native*

Mandarin *Working proficiency*

Education

Bachelor of Philosophy - Science

The Australian National University

2017 - 2020

- First Class Honours
- Chancellor's Letter of Commendation
- Specialised in Algorithm design

References

Martin Helmer

Associate Professor of Mathematics

Role: Honours Supervisor

Email: martin.helmer@anu.edu.au

Hanna Kurniawati

Senior Lecturer of Computer Science

Email: Hanna.Kurniawati@anu.edu.au

Role: Course Convener when demonstrating for Algorithms course