

Will Cashman

Mathematic and Computer Science Graduate student

Oxford, UK
wcashman1351@gmail.com
+44 7818114085
Github: wlscsm
LinkedIn: cashman-will

RESEARCH PROJECTS

Honours Thesis *The Australian National University* **2020**

- A study of the most popular practical and theoretical polynomial multiplication algorithms including the recent Harvey Van der Hoeven integer multiplication algorithm.
- Developed the nPoly open source Rust library for polynomials that implements several of the algorithms studied with a focus on performance.

<https://github.com/wlscsm/nPoly>

Study and attack of 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.

<https://github.com/wlscsm/NTRU-Python-with-Lat-Attack>

Drum Transcribing Platform *Beijing Institute of Technology* **2018 - 2019**

- Three weeks of private lectures on the topic of “Internet of Things” given by Beijing Institute of Technology.
- Developed an online platform to automatically transcribe drum compositions in real time and upload the musical score to a remote sever via WIFI.
- Implemented software for micro-controllers to process information from vibration sensors and upload information, as well as full-stack development of a website to process the uploaded information and provide a user interface for clients to interact with their data.

https://github.com/wlscsm/Drum_Transcriber_ASC

CONFERENCES

Maple Conference *Remote* **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.

EDUCATION

MSc in Mathematics and Foundations of Computer Science *Oxford, UK* **2023 - Present**

- Specialising in Quantum information and computing supported by foundations in category theory.
- Will matriculate in October 2024.

Bachelor of Philosophy - Science *The Australian National University, Australia* **2017 - 2020**

- Graduated with First Class Honours, GPA 6.5/7, and received Chancellor's Letter of Commendation.
- Specialised in Algorithm design for Computational Algebraic Geometry and Machine learning.

WORK EXPERIENCE

CrowdStrike *Software Engineer, Remote*

Dec 2022 - Sep 2023

- Managed infrastructure for the LogScale product as well as CrowdStrike's internal logs.
- Designed advanced automation and testing workflows to increase developer productivity in LogScale product.
- Coordinate upgrades of 80,000+ fleet of Ubuntu servers.
- Developed internal tools and microservices in Python and Golang to increase developer productivity and reliability of the LogScale product.

TikTok Go *Software Engineer, Shenzhen, CN*

Aug 2021 - Aug 2022

- Follow an agile release train to design and develop core CI/CD capabilities for company 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.item 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.

REFEREES

Dr Martin Helmer

Associate Professor of Mathematics at North Carolina State University

Role: Honours Supervisor

Email: mhelmer@ncsu.edu

Dr Hanna Kurniawati

Senior Lecturer of Computer Science at the Australian National University

Email: Hanna.Kurniawati@anu.edu.au

Role: Course Convener when demonstrating for Algorithms course

Dr Pierre Portal

Associate Professor of Mathematics at the Australian National University

Email: pierre.portal@anu.edu.au

Role: Supervisor for Fourier Analysis research course