

EDUCATION

UNSW

BSc. COMPUTER SCIENCE

Grad. 05/2022 with High Distinction

Notable marks listed at: marks.insou.dev

AWARDS

2019 The Macquarie Performance

Prize for highest academic performance in CSE (Year 1)

(1st Place)

2019 Co-op Scholarship

2019 Dean's Honours List (*Highly Commended*)

2020 Dean's Honours List (*Highly Commended*)

2020 Atlassian CTF (*5th Place*)

PROJECTS

mipsy; **Rust**

Invented **mipsy**, the education-focused MIPS32 emulator aiming to provide excellent diagnostics and debugging capabilities for students learning assembly code.

Typing the technical interview; **Rust**

A demonstration of type-level programming, displaying the Turing-complete capability of Rust's powerful type system.

flymark; **Rust**

An asynchronous terminal-UI marking client used by teachers at UNSW to mark student assignments at speed.

talloc; **JavaScript**

Our full-stack application & hiring platform used by the school of CSE.

chomp; **Java**

HTTP-based Java interface messaging protocol, demonstrating low-level knowledge of the Java Virtual Machine.

SKILLS & TECH

Program safety & correctness

Teaching & education

Static program semantics

Type systems & compilers

Linux systems-administration

Systems programming

Data-driven optimisation

Programming language tooling

Technical writing

Rust, Java, JS, TS, Kotlin, C, Haskell

Cloud: AWS, GCP, DigitalOcean

Kubernetes, Docker, Rancher, Nginx

TEX SOURCE

<https://github.com/insou22/resume>

EXPERIENCE

UNSW | LECTURER

May 2022 – Present (2 terms) | Sydney, AUS

- **22T3**: Proposed, designed, implemented, and lectured a brand new course COMP6991 - Solving Modern Programming Problems with Rust
- First offering of 100 students, coordinating a teaching team of 6.
- Managed overall administration and delivery of the course, including soliciting student feedback and iterating on design in response.
- **22T2**: Lectured and administrated core course COMP1521 - Computer Systems Fundamentals
- Approximately 800 enrolled students.
- Coordinated hiring & timetabling followed by in-session management of 33 teaching staff over \approx 14 weeks.
- Managed overall administration and delivery of the course.

UNSW | COURSE ADMINISTRATOR / TEACHER

May 2019 – May 2022 (9 terms) | Sydney, AUS

- Education, delivery, administration of Computer Science courses.
- Extensive Linux sysadmin, software development of course infrastructure.
- Teaching materials development, including software development of teaching tools (see: mipsy project).
- Teaching 1-3 classes each of 24 students per course offering.
- **COMP1521**: Tutor 20T2, 20T3, Admin 21T2, 21T3, 22T1
- **COMP2041**: Admin 21T1
- **COMP1511**: AT 19T2, Tutor 19T3, 20T1, 21T1.

AWS | SOFTWARE DEVELOPMENT ENGINEER

Sep 2020 – Feb 2021 | Sydney, AUS

- Worked in the AWS Redshift Team (cloud big-data) in a 6-month placement.
- Consolidated previous 40+ step process for customers to load sample data into a single simple step.
- Maintained strong project ownership, collaborated on overall architecture and deployed + monitored changes into live production.

UNSW CSESOC | PROJECTS DIRECTOR (TECHNICAL)

Dec 2020 – Dec 2021 | Sydney, AUS

Volunteering Position

- Co-Directed Projects Subcommittee; 7 direct-reports spanning 35 members.
- Liaised between reports (individual teams) and CSESoc executive team to manage progress, strategy and vision.
- Sole systems-administrator of CSESoc services, managed with Kubernetes control plane and Docker nodes.

THE NRMA | SOFTWARE DEVELOPER

Nov 2018 – May 2020 | Sydney, AUS

- Developed a highly available, scalable IVR system with AWS cloud system which cut costs and simplified existing systems.
- Secured knowledge base platform with cross-origin token-based auth for critical NRMA operations with AWS Cognito, S3, federated through varying authentication platforms.

ULFRIC PROJECTS | SOFTWARE DEVELOPER

2015 – 2017 | FL, USA (Remote)

- Designed a variety of systems, including cost effective dynamic pre-emptive VMs on Google GCP to run game-servers.
- Worked on HTTP-based protocol with Java runtime bytecode manipulation to simplify API creation & interoperability.