

## EDUCATION

### University of New South Wales (UNSW)

Feb 2019 – Present  
Graduating Dec, 2022

Final year student – Bachelor of Computer Science.

- Weighted Average Mark: 90.235 (High Distinction).
- Project Team Lead in the Computer Science & Engineering Society (CESoc).
- Atlassian **1<sup>st</sup> place** prize for Data Structures and Algorithms (COMP2521) out of 429 students.
- Macquarie Bank **1<sup>st</sup> place** prize in SENG2021 out of 159 students.
- Faculty of Engineering Dean's Award for being in the **top 25** 1<sup>st</sup> & 2<sup>nd</sup> year engineering students.

## EMPLOYMENT

### Google – Software Engineering Intern (Data Acquisition, Site Reliability Eng.)

Nov 2021 – Feb 2022

Improved the reliability of a URL fetching service that serves billions of requests per day, used primarily by web crawlers.

- Increased the availability of a 'hostname to shard' resolver from 99.99% to 99.999% by designing and developing new C++ interfaces and a Spanner database schema to phase out software anti-patterns, reducing annual downtime from 53 mins to 5 mins.
- Implemented a scalable multithreaded cache refresher in C++ which reduced data staleness from minutes to milliseconds.
- Planned and executed production deployment and testing procedures, including writing Bash scripts to automatically generate traffic and extract, normalise and compare contents from different storage services for verifying correctness, end-to-end.

### Accenture – Technical Architect (Part-Time)

May 2021 – Jan 2022

Developed an educational platform that tailors lessons for children with autism.

- Built a prototype of the product, achieving 1st place out of 37 teams in Accenture's 2021 hackathon, and later pitched the project to Accenture stakeholders to acquire funding for continued development.
- Implemented a lesson builder interface with React for developing reusable therapy sessions, reducing hour-long work to minutes.
- Developed a content management API using Node.js with TypeScript, GraphQL, Express and MongoDB.

### WiseTech Global – Associate Software Developer

July 2021 – October 2021

Developed the API and UI for a learning management system, 'WiseTech Academy'.

- Applied test-driven development to implement a REST API for a user and content management system with C#, ASP.NET Core and SQL Server, and consumed this API with interfaces built using ASP.NET Razor pages, jQuery and SCSS.
- Implemented a bulk enrolment time-saving feature, allowing CSV/XLSX files to be uploaded to create new users and course enrolments with dry-run results previewing and error reporting.

### University of New South Wales (UNSW) – Casual Academic Tutor

June 2020 – May 2021

Taught tutorials and labs for 'Data Structures & Algorithms' (COMP2521), achieving a student satisfaction rating of 5.89/6.00.

## PERSONAL PROJECTS – [TIMZ.DEV](https://timz.dev)

### Structs.sh – [structs.sh](https://structs.sh)

Led a team of 8 in building an educational computer science platform with an integrated visualiser, quiz and CMS.

- Developed frontend with React, TypeScript and Material UI, and architected an animation visualisation framework using SVG.js.
- Implemented a content management API with Node.js, TypeScript, Express.js and MongoDB.
- Dockerised and deployed the application to UNSW servers with Kubernetes and Rancher.

### Tactile-DS – [tactile-ds.timz.dev](https://tactile-ds.timz.dev)

An interactive data structure visualiser with a terminal interface, written in C and Ruby as a learning resource and teaching tool.

- Wrote Bash and Perl 5 scripts for automatically generating and running Makefiles in a large C codebase.
- Deployed the backend server using a reverse proxy NGINX server on an AWS EC2 instance.

### Techsuite – [techsuite.timz.dev](https://techsuite.timz.dev)

A social networking and real-time messaging application, built for developers.

- Built the frontend with React and SCSS and wrote a REST API server using Flask and PostgreSQL to handle authentication, user networks and profile personalisation.
- Deployed a Python Socket.IO server to set up bi-directional client-server communication for real-time messaging.

### Cosmica – [tymotex.github.io/Cosmica](https://tymotex.github.io/Cosmica)

A cross-platform sci-fi strategy game, developed with C# on Unity. It was released on Google Play and sold to a mobile game publisher.

## SKILLS

- Proficient: C++, TypeScript, JavaScript, React, SCSS, Python, C#.
- Familiar: Java, Bash, AWS, Docker, MongoDB, PostgreSQL, SQL Server, Flask, Express, ASP.NET.