

# JAESON LIANG

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## EDUCATION

### Bachelor of Computer Science

May 2024 – Jun 2027

University of New South Wales

- WAM(GPA): 84.625/100

Transcript: <https://transcript.jaesonliang.com/>

## PROJECTS

### Loyalty Checkin Management System (inquired & used by UNSW College)

Github: [www.github.com/LJaeson/ucLCM](https://www.github.com/LJaeson/ucLCM)

Demo Website: <https://unswcollegestudyclub.com/demo>

- Engineered a **full-stack, cloud-deployed** web application currently utilized by **UNSW College** to securely manage student check-in data, daily attendance, and administrative authentication. With **>100 users per day**, the application has managed **over 10,000 records** and boosted student form completion rates by **75%** compare with the old system.
- Developed a highly optimized frontend using **React, Next.js**, and **Tailwind CSS**, achieved real experience score **99/100**, successfully resolving complex inconsistencies across **iOS Safari** and **Android** platforms.
- Architected a high-performance **REST API** with **Python** and **FastAPI**, implementing strict **object-oriented design** principles and Dependency Injection to build a scalable, modular backend. Integrating a **PostgreSQL** database using **SQLModel** and **Alembic** for robust data management and 100% safe schema migrations.
- Deployed via **Azure, Vercel** and **Railway**, and leveraging **Pandas** to analyze and export attendance reports.

### Spotify lyrics overlay

Github: [www.github.com/LJaeson/spotify-overlap-lyrics](https://www.github.com/LJaeson/spotify-overlap-lyrics)

- Developed a **cross-platform, full-stack desktop** application using **Electron** and **React** that displays real-time, synchronized Spotify lyrics as an always-on-top overlay.
- Intercepted and parsed **encrypted** network traffic using a **Python** backend and **mitmproxy** to extract information.
- Engineered secure **Inter-Process Communication(IPC)** bridges to synchronize asynchronous data flow between the Python processes, the **Node.js** main process, and the React frontend.
- Integrated **better-sqlite3** and **electron-store** to manage local storage for dynamic user preferences and application state.
- Configured a modern, optimized build pipeline using **Vite** and **Electron Forge** to bundle assets and compile native **C++ modules** for cross-platform distribution. Enforced Test-Driven-Development principles with **unit testing**.

### Klaper

Github: <https://github.com/LJaeson/klaper>

- Developed an **edge-AI** smart home device on an ESP32-S3 microcontroller with **C++**, integrating a **self-trained Machine Learning model** to control house's lighting system via local network **APIs**.
- Manually control and architected a **multi-threaded** FreeRTOS architecture on dual core environment, construct a high-speed data acquisition pipeline to process raw hardware signal and feed them into AI to ensure **zero latency**.
- **Trained and deployed** a custom **TinyML neural network** directly onto an ESP32-S3 to perform real-time, on-device audio classification

## WORK EXPERIENCE

### UNSW College

#### Peer Tutor Leader

Jun 2025 – Present

- **Supervising and managing** the computing team with 8 members — collaborating with executives, delivering strategic **presentations** to key stakeholders, including the **Head of Student Success** and **Academic Heads**, and planning/organizing events, weekly rosters.

#### Peer Tutor

Sep 2024 – Jun 2025

- Delivered comprehensive tutoring and technical support for computer science courses, specializing in **C** and **JavaScript**.

### Saint Avia

#### Web Developer Intern

Jun 2024 – Feb 2025

- Migrated website from Wix to **WordPress** using **WooCommerce, Elementor, Hostinger**, and related tools.
- Developed bespoke site functionalities and overrode default plugin behaviors with custom **HTML, CSS**, and **JavaScript** to meet strict business requirements.

## SKILLS

- Language: **Typescript, Javascript, Java, SQL, C, C++, Python**, HTML, CSS, Shell
- Framework: **Node.js, React, Tailwind CSS, FastAPI, Electron, Next.js**
- Tools: Hostinger, Vercel, Railway, PostgreSQL, VPS, **Git, Vite, AWS, Pandas, Azure, Oracle**
- Hobby: 3D printing, RC plane(National Champion), Laser cutting, Archery, Travel, Scuba diving, Sailing, Hiking