

# CARLOS LIANG

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## ABOUT ME

I've been coding for 10 years. I am currently a full-time software engineer at Macquarie Group, and work with Bloom AI, an AI EdTech startup, on a contract basis. I have wide experience across startups and financial services - including CryptoTaxCalculator, Nasdaq, and PwC, and I thrive on tackling interesting side projects.

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## EXPERIENCE

### Bloom AI

May 2024 – Present

*Contract Full Stack Engineer*

- Worked directly with founder in early-stage AI EdTech startup, to deploy an AI tutor platform to 10000+ students across Australia, UK and NZ
- Implemented a dialogue-based Knowledge Tracing (KT) model, leveraging GPT-4o for auto-annotation of student responses and a fine-tuned Llama 4 Instruct model to track per-skill mastery
- Enabled LMS integration by implementing LTI 1.3 compliance with single sign-on

### Macquarie Group

April 2021 – Present

*Senior Software Engineer*

- Developing software for Macquarie Group's Futures Clearing team, working cross-functionally with business and operations to manage US\$10bn+ of client funds
- Providing 3<sup>rd</sup> level support which includes investigating production issues in Macquarie's Futures Clearing Platform, determining root causes and providing same day fixes
- Built the FX-Deals web application, automating client forex deal generation through the implementation of a journal service, authentication system, refresh tokens, etc. Utilised Java, Javascript, Maven, Spring Boot, Restful API, Hibernate and AWS
- Led end-to-end development of GEMS web application, an integrated trade matching and allocation system to accommodate an estimated daily volume of 100,000 visitors. Utilised Typescript, Angular, Java, Spring Boot, PostgreSQL and AWS EC2
- Mentored and led a team of new starters to release projects into production

### CryptoTaxCalculator

Jun 2020 – Mar 2021

*Software Engineer*

- Worked directly with founder in an early-stage cryptocurrency startup (now raised \$4M)
- Parsed cryptocurrency data and generated customer insights including tax recommendations using TypeScript
- Helped with other ad hoc programming tasks in JavaScript and Python, including onboarding ~15 new crypto exchanges (out of ~70), web scraping and bug-fixing for clients

### Approach Solutions

May 2019 – Aug 2020

*Full Stack Developer*

- Developed "Growing Teams" payroll app using Java and on SAP Cloud Platform, building over ~20 different features

### Nasdaq

Nov 2018 – Mar 2019

*Software Engineering Intern*

- Automated configuration management for ~500 NASDAQ servers using Puppet
- Wrote Bash algorithm which optimised Puppet testing process from 2 hours to 30 seconds

### PwC

Jun 2018 – Aug 2018

*Consulting Winter Intern (Cyber Security)*

- Constructed a convolutional neural network in python achieving ~95% accuracy in overcoming CAPTCHAs with overlapping symbols
- Performed a brute-force login attack on Jira to test the effectiveness of my convolutional neural network in action

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## EDUCATION

### University of New South Wales (UNSW Sydney)

2015 – 2020

*Bachelor of Commerce (Finance) / Computer Science (Artificial Intelligence)*

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## PROJECTS

- Personal Website with **Next.js** and **Three.js** - <http://carlos-liang.github.io/>
- AI art generation web application with text to image **stable diffusion** model
- SportsConnect web application connecting users to sporting events, created in **React** and **Firebase**
- Web scraping in **Python** for e-commerce startup to develop a market share model for competitor analysis

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## SKILLS

- Proficiency in Cantonese
- Interests: exercise, reading, esports, mindfulness, AI
- Experience in Java, JavaScript, TypeScript, Angular, React, Next.js, Python, Linux, SQL, Spring Boot, Maven, GitHub, Claude Code, and AI-assisted development tools.