Richman Tan

Software Developer · Software Engineering, University of Auckland
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Education

The University of Auckland Auckland, New Zealand
Bachelor of Engineering (Honours), Software Engineering ***(Cumulative GPA: 8.0/9)*** *Expected Nov 2026*

- **Dean's Honours List (2023 & 2024):** Top 5% of cohort.
- **Relevant Coursework:** Object-Oriented Programming in Java (A+), Database Systems (A+), Data Structures and Algorithms, Operating Systems, Software Architecture, Networks and Security, Linear Programming.

Experience

Sandfield Auckland, New Zealand
Software Developer *Nov 2026 - Present*
Software Engineering Intern *Nov 2025 - Oct 2026*

- Built internal tools across **C#/.NET**, **PostgreSQL** with EF Core, and **React** with **TypeScript**.
- Background processing with **Hangfire** across many repositories.
- Retrieval (**RAG**) for an AI assistant, so its answers draw on the right context.
- Native **iOS** and **Android** work.

Fetch TCG Ltd. Auckland, New Zealand
Software Engineering Intern *Nov 2024 - Feb 2025*

- Designed and implemented a reusable **Shopify theme** using **Liquid**, improving UI consistency and maintainability for an e-commerce platform serving **1,000+ registered users**.
- Built product search and filtering with **Liquid** and **NextUI** across large product collections.
- Improved frontend performance through **lazy loading**, asset minification, and theme optimisation.

Projects

DementiaGuide AI (Final Year Research Project)
React Native (Expo), TypeScript, RAG, hybrid vector + keyword search, PostgreSQL, ElevenLabs *GitHub*

- Built a **RAG** assistant answering dementia-care questions from **449 curated passages**, grounding every answer in a citable source via **hybrid vector and keyword search**.
- Rebuilt evaluation after an **LLM-as-a-judge** scored 32/32 with near-zero discrimination, adding **deterministic retrieval and safety metrics** plus validated citations.
- Ran a **systematic review of 13 sources** on AI-assisted dementia care, applying **WHO health-AI ethics and governance guidance** to the system's safety and privacy design.

Virtual Patient Simulator (VPS)
Next.js, React, TypeScript, Tailwind CSS, MongoDB, Firestore, Node.js, GitHub Actions, Fly.io *GitHub*

- Engineered an image-upload pipeline serving **4,000+ Medical & Health Science students** by storing media in **MongoDB GridFS** and synchronising metadata with **Firestore**.
- Built the **scenario-authoring UI** educators use to create and edit patient simulation cases.
- Abstracted data access behind **custom React hooks** so educators can embed rich media without code changes.

Leadership & Involvement

Software Engineering Student Association Auckland, New Zealand
Treasurer · Social Events Lead *2024 - Present*

- Managed club finances as **Treasurer**: budget tracking, reimbursement batches, and **Xero** reconciliation, with receipts attached to every payment.
- Designed a repeatable **AI-assisted reimbursement workflow** spanning four systems, with a **human approval step before any payment is saved**.
- Led a team of 4 coordinators as **Social Events Lead**, organising events for software students.

Technical Skills

Languages: Java, C#, Python, TypeScript, JavaScript, SQL, C, Bash, HTML/CSS
AI & Data: RAG, hybrid vector + keyword search, embeddings, LLM evaluation, PostgreSQL, MongoDB
Technologies: Git, Docker, .NET, EF Core, Hangfire, React, Next.js, GitHub Actions, Agile/Scrum