Dennis Hu

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EDUCATION

University of Auckland   Auckland, New Zealand
Bachelor's of Science, Computer Science   *Jan 2023 — July 2025*

- Cumulative GPA: 8.8/9.0
- Relevant Coursework: Algorithms and Data Structures, Object Orientated Programming, Software Development Methodologies, Large Scale Software Development, Data Communications and Security

WORK EXPERIENCE

Backend Lead / Fullstack Software Engineer | NextJs, Payload CMS, Tanstack Query   March 2025 — Present
University of Auckland   *Auckland, New Zealand*

- Used **NextJS** and **Payload CMS** to co-develop **Encapsulate**, a solution that streamlines the university capstone project collection process as part of a **6** person agile team
- Utilised **Test-Driven Development** (TDD) to improve code reliability by **40%**
- **Engineered and optimised** a suite of robust API endpoints and backend services using Payload CMS and Next.js, forming the core data infrastructure powering the platform's end-to-end functionality.
- Achieved an **80%** reduction in API calls by implementing debouncing and caching with **Tanstack Query** to optimise client-side request handling.
- Reduced admin page load time by **50%** by optimising uses of useEffect

Fullstack Software Engineer | NextJS, TSOA, Firestore, Firebase Auth   March 2024 — Present
University of Auckland Web Development and Consulting Club   *Auckland, New Zealand*

- Engineered backend features for automating weekly schedule generation, boosting scheduling efficiency by **80%**.
- Architected a scalable **CMS** for managing FAQs and external resources, enabling seamless content updates and cutting future development effort by **30%**
- Implemented secure user authentication with **Firebase Auth** and used **Firestore** to store data, laying a robust foundation for scalable user and data management

Summer Research Software Intern | PHP, Java, SQL   December 2024 — February 2025
University of Auckland   *Auckland, New Zealand*

- Contributed to the development and enhancement of **Automarker** an automated grading system used by **1000+** students
- Implemented a student enrollment visibility feature, allowing course staff to view and manage **1000+** active student records via raw SQL queries
- Strengthened platform security by integrating hashing algorithms, preventing unauthorised access to pre-submission files and mitigating predictable URL vulnerabilities

PROJECTS

Capybot

- Developed CapyBot, a discord bot with various fun economy features, serving over **100** users in **10+** Discord servers.
- Delved into the UI of the discord.py library and implemented view classes, increasing user engagement by **40%**.
- Improved command response time by **90%** through the integration of a local caching system, reducing MongoDB reads by **70%** and efficiently processing over **1,000** requests daily.
- Managed and synchronised data between local cache and MongoDB, maintaining data integrity across **100+** database entries and ensuring high performance.

SKILLS

- **Programming Languages**: JavaScript/Typescript, Python, HTML/CSS, Java
- **Technologies and frameworks**: React, Next JS, Payload CMS, Tailwind CSS, TSOA, Express, Git, Firebase Auth, Firestore, MongoDB, SQL, TanStack Query