

TAN KHANG HOU

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EDUCATION

National University of Singapore

Aug 2022 - Present

Bachelor of Computing in Computer Science

- Exchange student at University of Texas at Austin (Jan - May 2025)
- Recipient of the 2025 CCSGP Public Service Fellowship Grant
- Relevant Coursework: Intro to AI and Machine Learning, Foundations of Artificial Intelligence, Generative Visual Computing
- SG Digital Scholarship - Awarded by Singapore's Infocomm Media Development Authority

TECHNICAL SKILLS

- Languages: Javascript/Typescript, Java, C#, SQL, NoSQL, Golang, Python, Dart, Solidity
- Technologies: Next.js, React, NextJS, React Native, Spring Boot, PyTorch, Flutter, Angular, Docker, FastAPI, Firebase

EXPERIENCE

JPMorganChase (Singapore), Software Engineer Intern

Jun 2025 - Present

Singapore Trade Data Exchange (Singapore), Software Engineer Intern

May 2024 - Aug 2024

- Streamlined identity verification processes within supply chain ecosystem by creating a user-friendly CLI tool, to generate decentralised ID tokens for user verification on the blockchain
- Improved customer query resolution on the SGTraDex platform by implementing a highly-accurate RAG-based AI chatbot with Amazon Bedrock, scoring 95.8% on a response reliability benchmark

ShareLah (Singapore), Freelance Software Developer

Dec 2023 - Feb 2025

- Prevented ShareLah termination on App and Play stores by upgrading a legacy codebase to support minimum SDK versions, additionally boosting payment conversions by 433% after integrating single sign-on authentication and Apple/Google Pay
- Reduced server costs by 20% on AWS by optimizing deployments and eliminating redundant resources

Computing for Voluntary Welfare Organisations (Singapore), Full-Stack Developer Intern

May 2023 - Aug 2023

- Achieved a 500% improvement in application performance and system maintainability by migrating a 150,000-line monolithic Ruby on Rails architecture to a dynamic, multi-tenant architecture in Golang
- Eliminated the need for 17 different hard-coded forms within the codebase by engineering an extensible form schema, similar to Google Forms, reducing maintenance overhead

PROJECTS

- Volunteer Tutor Assistant - Identified and tackled inefficiencies in volunteer tutor handover processes by building an application to suggest areas of weakness tutors should focus on based on tutee's skill level and likes/dislikes over a period of time
- E-Commerce Site - Boosted Orthogait's e-commerce presence by designing & developing a site costing \$0 to maintain, and integrated Stripe payments and ezParcel delivery, resulting in a 400% increase in page visits within first week of launch
- Reinforcement Learning-Based LLM Jailbreaker - Analysed and replicated a research paper using reinforcement learning to generate LLM jailbreak prompts which are usable across different LLM providers and prompt types
- IoT Partner for Parkinson's Patients - Created an IoT solution to process 900 data points per second and classify tremors in patients with Parkinson's disease, using AI to categorise daily activities and generate automatic patient activity diaries
- Personal VPN Server - Built a personal VPN server on a Raspberry Pi 3 using WireGuard, additionally automating the process of switching to my grandmother's favourite YouTube channel using launchd

VOLUNTEER EXPERIENCE

Google Developer Students Club, Technical Lead

Aug 2023 - May 2024

- Built a website to automate volunteer registration, communication, and attendance tracking, replacing manual processes previously done via Google Forms and Sheets for managing over 5,000 signups and 800 unique volunteers annually

Are You Ok? A Mental Health Help Toolkit Aug 2022 - Present, Software Developer

May 2022 - Present

- Developed a mental wellness chatbot to empower peer supporters in providing proper emotional support through conversation suggestions, aligned with best peer support practices