# Tan Khang Hou

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## Education

**National University of Singapore**                                      Aug 2022 - Dec 2025 (Expected)
*Bachelor of Computing (Honours) in Computer Science*                              *Singapore*

## Technical Skills

**Languages**: Javascript/Typescript, Java, C#, PostgreSQL, MongoDB, Python, Dart, LaTeX, Markdown
**Technologies**: Next.js, React, TailwindCSS, NestJS, Express.js, React Native, ASP.NET, Spring Boot, Solidity, Angular, Flutter

## Experience

**SGTraDex**                                                              May 2024 – Present
*Software Engineer*                                                              *Singapore*
- Implemented the user interface for a RAG-based chatbot and text streaming, while fortifying the chatbot's reliability by creating evaluation metrics based on a vector database using LlamaIndex.
- Identified solutions capable of returning deterministically-generated wallet addresses across different API keys for TradeTrust, an open-source blockchain verification service for logistics, by evaluating Web3 authentication services, including Magic.

**ShareLah**                                                              Dec 2023 – Jan 2024
*Freelance Developer*                                                            *Singapore*
- Prevented ShareLah termination on App and Play stores by upgrading a legacy codebase to support minimum required versions, additionally achieving a 433% boost in user conversion, by integrating single sign-on authentication and Apple/Google Pay.
- Maintained a 99.9% server uptime by managing application deployment and maintenance with AWS EC2 and S3.

**Computing for Voluntary Welfare Organisations**                         May 2023 – Aug 2023
*Full-Stack Developer*                                                           *Singapore*
- Boosted application performance by 500% and enhanced system maintainability by migrating a 150,000-line monolithic backend service from Ruby on Rails to Golang.
- Eliminated the need for 17 different hard-coded forms in the codebase by engineering a dynamic and extensible form schema.

**Transliner**                                                            Mar 2020 – Aug 2020
*Full-Stack Developer*                                                           *Singapore*
- Improved server performance by 600% and overall system maintainability by migrating a legacy ERP system from ASP.NET WebForms to ASP.NET Core.
- Enabled clients to track shipments in real-time by designing and developing a responsive client-facing website in Angular.

**Centre for Strategic Infocomm Technologies (CSIT)**                     Oct 2019 – Feb 2020
*Backend Developer*                                                              *Singapore*
- Facilitated customisable survey creation by structuring the backend to read and write dynamic data for a drag-and-drop e-form builder in Spring Boot and MongoDB.

## CCA

**Google Developer Students Club**                                        Dec 2023 – Present
*Technical Lead*                                                                 *Singapore*
- Streamlined registration of over 6,500 volunteers and creation of over 800 events annually by leading a team of 8 software engineers to create a Volunteer Management System (VMS) for Ground-up Initiative.

## Projects

**E-commerce Website** | *Next.js, Serverless API, TailwindCSS, Nodemailer, Stripe*
- Achieved a 400% increase in page visits within the first week of launch of a zero-cost e-commerce website, featuring robust search functionality, SEO optimisation and seamless product checkouts.

**GoLunch** | *React, Express.js, web3.js, Solidity, Truffle, MySQL*
- Enabled chain restaurants to adopt a unified rewards system by developing a blockchain-based website that stores users' travelled distance as cryptocurrency, which is then exchanged for discounts at participating restaurants.

**TremorGuard** | *Next.js, NestJS, PyTorch, Azure IoTHub, Flask, Arduino*
- 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.

**Are You Ok? A Mental Health Help Toolkit** | *Python, Telegram Bot, OpenAI, FastAPI, Pydantic, PostgreSQL*
- Empowered caregivers to better respond to sensitive conversations on mental health by developing a Telegram bot that uses OpenAI to provide suggestions based on professional advice.