

# Tan Hiok Kuek

Currently interested in System Design

[Website](#) | [Mail](#) | [Linkedin](#) | [Github](#)

## EDUCATION

### National University of Singapore

Aug 2024 - May 2028

*Bachelor of Computing in Computer Science (Cumulative GPA 4.64)*

- Ngee Ann Kongsi Scholarship for AY 25/26

## WORK EXPERIENCE

### Undergraduate Teaching Assistant (CS2030S) – NUS School of Computing

Jan 2026 – Present

- Facilitating lab sessions for **Programming Methodology II**, covering **Object-Oriented Programming** and **Functional Programming** abstractions in Java (Monads, Functors, etc.).
- Mentoring 20+ students in developing robust software designs, focusing on **CS fundamentals**, recursion, and type systems.

### Research Assistant – NUS-NCS Cybersecurity Lab

Aug 2024 – Aug 2025

- Architected **high-concurrency phishing detection API** serving **10,000+ users**, implementing auto-scaling infrastructure and security protocols with **Terraform IAC**
- Reduced cost of cloud infrastructure by **50%** through scalable architecture and automation using **Cloudwatch Metrics**.
- Engineering efforts above were published on [PhishIntel](#) which was accepted at **World Wide Web Conference 2025**
- Developed [DistilBERT classifier](#) with the **transformers library** achieving **94%+ accuracy** on contemporary phishing datasets with advanced preprocessing.
- Built cross-platform **browser extension** bundled with a **native host**, that supports **on-premise** email phishing detection.
- Developed multiple dashboards and visualisation tools with **JavaScript** and **React**.

### Deputy Head Ops and Security Officer – Singapore Armed Forces

Jan 2023 – Nov 2023

- Managed operations and security for a unit of **300+ personnel**, coordinating complex training logistics and data security.
- Recognized with multiple honors including **Sword of Merit** and **Commanding Officer's Coin** for operational excellence.

## TECHNICAL PROJECTS

### Agentic Social Media Content Generator – AI Agents & LLM Orchestration

Sep 2025

- Engineered an **autonomous AI agent pipeline** using **LangSmith**, **GPT-4**, and **Claude** to scrape Reddit data, perform sentiment analysis, and generate creative scripts with automated quality checks.
- Implemented comprehensive tracing and monitoring to optimize LLM cost and performance for production-ready agents.

### HomeLab Infrastructure – Personal Server & Automation

Jul 2025

- Architected a Linux-based home server environment with **Docker** for containerized services, managing automated backups and private cloud storage.
- Deployed secure remote access using **Cloudflare Tunnels** and managed network traffic for self-hosted instances.

### Tanbucha – E-commerce Platform

May 2025

[tanbucha.com](#)

- Built responsive e-commerce platform with **Next.js** and **TypeScript**, implementing mobile-first design patterns.
- Integrated **Stripe API** for payment processing and **EmailJS** for automated customer notifications.
- Achieved **50+ organic visitors** and **100+ sales** through SEO optimization and performance tuning.

## HONORS & TECHNICAL COMPETITIONS

NUS Hackers Hack&Roll (1st)

SplashAwards 2023 (1st)

SUTD WhatTheHacks 2023 (1st)

CloudHacks 2023 (1st)

GroundZero 2024 (Finals)

NUS CHS Case Comp (Finals)

## SKILLS & INTERESTS

**Languages:** Python · Java · Javascript/TypeScript/HTML/CSS (TypeScript) · SQL

**Tools & Frameworks:** React, Next.js, Plasmo · Flask · OpenAI, LangChain, LangSmith · Docker, Terraform · PostgreSQL

**Certifications:** [AWS Certified Solutions Architect - Associate \(SAA-C03\)](#)

**Interests:** Applied AI · Machine Learning · Full-Stack Development · Cloud Computing