Tan Hiok Kuek

+65 87966816 | hiokkuek@u.nus.edu | www.hiok.dev | linkedin | github

PROFESSIONAL SUMMARY

Computer Science student focused on backend development and infrastructure engineering. Proven ability to architect and deploy technical solutions, including AI agent pipelines, self-hosted infrastructure, and automated systems. Proficient in Python, TypeScript, Docker, and Linux systems, with demonstrated skills in system optimization and API integration. Eager to apply technical expertise in building scalable, reliable backend systems that power Singapore's defence capabilities. Available for internship July 2026 - December 2026.

CORE COMPETENCIES

- Full-Stack Development
- Cloud Architecture (AWS)
- AI/ML Integration
- Automation & CI/CD
- Python
- Java

EDUCATION

National University of Singapore   Aug 2024 – Nov 2027 (Expected)
Bachelor of Computing in Computer Science (Cumulative GPA 4.64)
- Ngee Ann Kongsi Scholarship for AY 25/26

WORK EXPERIENCE

NUS School of Computing – *Undergraduate Teaching Assistant*   Jan 2026 – Present
- Delivered lab sessions on Object-Oriented and Functional Programming abstractions in Java, strengthening 13 students' understanding of CS fundamentals and type systems.

NUS-NCS Cybersecurity Lab – *Research Assistant*   Aug 2024 – Aug 2025
- Sole frontend engineer owning architecture, performance, and delivery for a production platform used by 10,000+ users.
- Reduced AWS Cost by 50% ($200/day to $100/day) through scalable architecture and automation using cloudwatch.
- Built backend AI workflows using Python and modern LLM orchestration tool to detect phishing emails.
- Designed dashboards enabling comparison between workflows, activity tracking and decision-critical insights.
- Built cross-platform browser extension bundled with a native host, that supports on-premise email phishing detection.
- Stabilised production systems by migrating AWS infrastructure over to Terraform under tight deadlines.

Singapore Armed Forces – *Deputy Head Ops and Security Officer*   Jan 2023 – Nov 2023
- Coordinated training logistics and data security operations for 300+ personnel, implementing PowerBI dashboards and Excel automations that streamlined training schedule tracking and improved planning efficiency by 40%.
- Achieved operational excellence through effective personnel management and process optimization, earning Sword of Merit and Commanding Officer's Coin for outstanding performance.

TECHNICAL PROJECTS

Agentic Social Media Content Generator – *AI Agents & LLM Orchestration*   Sep 2025
- Built AI content pipeline with GPT-4, Claude, and LangSmith for automated Reddit scraping and script generation, generating 1M+ views.
- Optimized LLM performance through comprehensive monitoring, reducing API costs.

HomeLab Infrastructure – *Personal Server & Automation*   Jul 2025
- Built and managed Linux home server infrastructure with Docker containerization, Cloudflare Tunnels for secure access, and automated backups, achieving 99.9% uptime.

Tanbucha – *E-commerce Platform*   May 2025
- Built responsive e-commerce platform with Next.js and TypeScript, integrating Stripe payment processing and automated email notifications.
- Drove 50+ organic visitors and 100+ sales through SEO optimization, mobile-first design, and performance tuning strategies.

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)

ADDITIONAL INFORMATION

- **Languages**: Python, Java, Javascript, TypeScript, Terraform, Bash, SQL
- **Frameworks**: Next.js, React, React Native, Plasmo, Flask, FastAPI, Node.js, Langchain
- **Developer Tools**: Git, Docker, AWS, Microsoft Azure, Google Cloud Platform, Firebase, Supabase
- **Certifications**: AWS Certified Solutions Architect - Associate (SAA-C03)
- **Interests**: Running, Bouldering, Diving