Hao Jun Mah

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Education

National University of Singapore — Singapore
Bachelor of Computing, Computer Science — Aug. 2024 – May 2028

- **Cumulative GPA**: 4.5
- **Relevant Coursework**: Software Engineering, Data Structures and Algorithms, Programming Methodology

Experience

Software Engineer Intern — Aug. 2026 – Dec. 2026
TikTok | Global LIVE Data Platform — Singapore

Software Engineer Intern — Jun. 2026 – Aug. 2026
Citi — Singapore

- Built a Grafana observability dashboard with alerting for a core banking platform, surfacing **real-time metrics** across **100,000+ daily corporate account transactions** to support operational monitoring.
- Refactored a **Spring Boot** (**Java**) microservice codebase into **shared internal libraries**, eliminating code duplication across services and reducing estimated development time for future microservices by **15%**.
- Developed an end-to-end **Kafka** test suite that injects synthetic transactions and validates downstream service output, ensuring correctness across critical **event-driven processing pipelines**.

Software Engineer Intern — Jan. 2026 – Apr. 2026
Fly Fairly — Singapore

- Identified and eliminated **3 key operational bottlenecks** through structured stakeholder interviews.
- Built a **Next.js** back-office reporting dashboard that centralized project metrics and reporting workflows, reducing manual cross-team status coordination and improving estimated sprint throughput by **20%**.
- Influenced technical roadmaps for **3 of 6** departments by documenting modernization proposals for stakeholder-identified workflow problems, including recommended architecture, implementation tradeoffs, and rollout plans.

Software Engineer Intern — May 2025 – Jul. 2025
Toppan Ecquaria — Singapore

- Integrated **RAG pipelines** and **LLM agents** into enterprise SaaS products, enabling context-aware document Q&A across **10+ client deployments** and supporting new product adoption and upsell opportunities.
- Enhanced a multilingual AI video dubbing product licensed at **$5,000 per deployment** by integrating **Kokoro** audio generation and **LatentSync** lip-sync models to improve automated speech-to-video alignment.
- Modernized **React** and **FastAPI** web applications used across Toppan Next Group by refactoring frontend components and backend APIs, improving maintainability and production readiness for a **2,000-user** deployment environment.

Projects

GroceryPicker | *NUS Orbital – Apollo 11 Level* — May 2025 – Jul. 2025

- Built an Android application with **React Native** + **Express.js** that returns the best prices for each grocery out of every major supermarket, allowing users to minimize spending with ease.
- Implemented rigorous and scheduled web scraping of supermarket groceries with **Playwright** hosted on **GCP** to obtain a database of **50k groceries**, which is stored in PostgreSQL (Supabase).
- Implemented retrieval-augmented semantic search over the **50k grocery records**, enabling users to query products by natural language and rank matching items by price.

Technical Skills

Languages: Python, JavaScript, TypeScript, Java, C++
Frontend & Backend: React, React Native, Next.js, FastAPI, Express.js, Spring Boot
Databases & Cloud: PostgreSQL, Supabase, Google Cloud Platform
Extracurricular Activities: Google Developer Student Club @ NUS, NUS Fintech Society
Insight Programmes: Jane Street PORTAL, Optiver FutureFocus