

EDUCATION

NANYANG TECHNOLOGICAL UNIVERSITY (NTU), SINGAPORE

Aug 2024 - May 2028 (Expected)

Bachelor of Computing (Hons) in Computer Science

Relevant modules : Object-Oriented Design and Programming, Software Engineering

SINGAPORE POLYTECHNIC, SINGAPORE

Apr 2019 - Apr 2022

Diploma of Information Technology, specialized in data science and digital analytics

Relevant modules : Machine Learning, DeepLearning, Reinforcement learning, DevOps

WORK EXPERIENCE

MINDSG, SINGAPORE

Project Intern

July 2026 - Present

- Continuing development on ReMinds and FareSense

Full Stack Developer (Contract)

Feb 2026 – July 2026

- Developed an internal-facing application for the Enabled Living Programme using React and Google Cloud, replacing manual tracking workflows and enabling real-time monitoring of MINDS clients.
- Built and deployed a route optimisation platform (React + Vite, FastAPI, Google Cloud Run) to replace manual spreadsheet-based school assignments for 1,000+ students, integrating Google Maps APIs, Firebase Auth, and Firestore with custom ranking algorithms and fare calculation logic to automate transport planning, significantly reducing staff processing time. Currently in use by MINDS staff.

SINGAPORE CIVIL DEFENCE FORCE (SCDF)

Oct 2022 - Aug 2024

Woodlands Fire Station – Sergeant 1 (Sgt1)

- Trained 10+ new firefighters in emergency response protocols and CPR procedures, improving team operational readiness and earning the Best Performance Award (Feb 2024).
- Executed fire and rescue operations across 50+ emergency incidents as part of the Fire Rescue Team, maintaining a consistent emergency response time within operational benchmarks.

SPOT WORKS PTE LTD, SINGAPORE

Mar 2021 – Aug 2021

IT Intern (Full Stack Development)

- Delivered production-ready full-stack features for a deployed VR web platform using Node.js and Laravel, resolving critical backend and frontend bugs to improve system stability and streamline personalised tour creation workflows.
- Assembled interactive virtual property tours using Pano2VR for 3 property developer clients, enhancing remote visualisation capabilities and improving sales presentation engagement.

ACTIVITIES

Hack For Cities 2026 (2nd out of 40+ teams)

Jan 2026- Feb 2026

- Spearheaded Aegis, an agentic AI system using IBM watsonx.ai to triage, cluster, and dispatch municipal complaints, reducing manual workflow processing steps by an estimated 60% within a 48-hour sprint.
- Developed a Telegram Mini App with closed-loop photo evidence verification, enabling end-to-end complaint resolution across 3 automated pipeline stages using React + Vite and Supabase.

TechFest Hackathon 2026 (Honourable mentioned, top 13 out of 100+ teams)

Jan 2026- Jan 2026

- Built CareerSea, an AI-powered career platform integrating multi-source data (SkillsFuture, MOM, Adzuna) with Google Gemini-driven resume analysis and mock interviews, reducing job search fragmentation for fresh graduates into a single unified workflow.
- Produced transparent job matching with skill gap tracking and a Kanban application tracker with AI SmartFill, cutting estimated manual data entry time by 70% for end users.

PROJECT

- Engineered an agentic RAG system using LangGraph (FastAPI + React + PostgreSQL/pgvector) where the LLM decides when to retrieve notes vs answer directly, preventing hallucination by forcing all answers through a grounding contract and citation tracking.
- Implemented a retrieval quality loop with an LLM grader that judges chunk relevance and triggers query rewrites when results are weak (up to 2 retries), improving retrieval accuracy without requiring manual intervention.
- Built streaming responses and multi-turn support using LangGraph's checkpointing for conversation state and Procrastinate for async document processing, with retrieval optimization using OpenAI embeddings and cross-encoder reranking.

[4DTOTO](#) | *Personal Project*

Feb 2026 - Mar 2026

- Built a cross-platform 4D/TOTO ticket tracker to replace manual ticket entry and result lookups, using Expo, React Native, and TypeScript to significantly reduce record-keeping friction.
- Engineered a FastAPI OCR pipeline that converted ticket photos into structured draw data with Google Gemini's vision model, a preview-and-confirm review step, and async PostgreSQL persistence, reducing manual transcription errors.
- Automated draw-result checking that replaced repeated Singapore Pools checks with APScheduler, httpx, and BeautifulSoup polling, surfacing win/loss notifications as results became available.

[SplitMoney Web Application](#) | *Personal Project*

May 2025 - July 2025

- Devised a full-stack shared expense tracking platform (React, FastAPI, PostgreSQL) automating complex split calculations and eliminating manual reconciliation errors for groups of up to 10 concurrent users.
- Structured secure RESTful APIs for authentication, transaction management, and balance updates, ensuring data consistency across concurrent sessions with zero reported data conflicts during testing.
- Launched the application on Vercel with a scalable backend configuration, achieving cross-device accessibility with an average page load time under 1.5 seconds.

SKILLS

Languages: Proficient in English and Chinese**Programming Languages:** JavaScript, Python, PHP, Java, C, C++**Frameworks:** Express.js, React, Laravel, FastAPI, LangChain**Tools & Tech:** UML, Git, MySQL, Microsoft SQL Server, PostgreSQL, Docker**Data Analytics:** Python, Tableau, TensorFlow, Scikit-learn, Pandas**Others:** Pano2VR, Microsoft Suite, Photoshop