

# Timothy Lee

Singapore | timothylyh@hotmail.com | +65 9857 2155  
timooothy.dev | linkedin.com/in/timooothy | github.com/timooo-thy

## EDUCATION

---

**Bachelor of Science (B.S.) - Data Science and Artificial Intelligence** Aug 2022 - Jun 2026 (Expected)

*Nanyang Technological University, Singapore*

- **CGPA:** 4.75/5.00
- **Scholarships:** Nanyang Technological College Scholarship, Bigo Excellence Scholarship
- **Awards:** Dean's List AY 23/24
- **Hackathons:** SimplifyNext RPA x Gen AI 2024 (1st Place), DSTA BrainHack 2024 (1st Runner Up), GIC Code To Impact 2024 (2nd Runner Up), HTX HacX 2024 (3rd Runner Up)
- **Certifications:** Google Analytics Specialisation, Google UX Specialisation

## EXPERIENCE

---

**Machine Learning Engineer Intern** Aug 2025 – Dec 2025

*TikTok, Singapore*

- Engineered high-precision Small Language Models (SLMs) via Knowledge Distillation to capture user intent; applied a novel "Random Retrieval Augmented Generation (RAG)" fine-tuning strategy for GeoIntent (0.90 P/R) and semantic query analysis for Timeliness (0.96 P/R).
- Designed and deployed a near-line cache architecture across 16 countries (US, EU, ROW) to serve these query intent signals in real-time.
- Integrated GeoIntent and Timeliness query intent signals into Ranking and Retrieval pipelines across 16 countries (US, EU, ROW), measurably improving local discovery relevance for location-based and time-sensitive search results.

**Software Engineer Intern** May 2025 – Aug 2025

*Goldman Sachs, Singapore*

- Engineered a Policy Builder Playground for authorisation policies, featuring custom syntax highlighting and an integrated chatbot delivering 95% compilable code for over 100 internal developers.
- Developed a graph-based Self Healing Code Agent leveraging Retrieval Augmented Generation (RAG), enabling automated code correction, saving an estimated 10 hours per developer weekly.
- Architected and deployed the Self Healing Code Agent backend on Kubernetes, supporting horizontal scaling and high availability for internal developer tooling.

**Software Engineer Intern** Jul 2024 – Dec 2024

*ShopBack, Singapore*

- Spearheaded implementation of Generative AI solutions to optimise internal operations, reducing average handling time (AHT) from 365 seconds to 200 seconds (45% improvement).
- Developed a prompt management version control platform integrating Salesforce and Zendesk, resulting in 80% improved consistency and 60% faster workflows.

**Machine Learning Engineer Intern** Apr 2024 – Jul 2024

*Home Team Science & Technology Agency, Singapore*

- Built a multimodal Large Language Model (LLM) chatbot integrating LLaVA, Whisper, and LLaMA3, reducing case processing time by over 40% for officers.
- Implemented memory capabilities and optimised query retrieval using LangChain and Chroma via Retrieval Augmented Generation (RAG) and advanced metadata filtering.
- Finetuned a LLaMA3 large language model using QLoRA with domain knowledge, improving accuracy by 30% after evaluation.

## SKILLS

---

**Languages:** Python, TypeScript, Golang, SQL

**Machine Learning & AI:** PyTorch, LangChain, LangGraph, HuggingFace Transformers

**Databases:** PostgreSQL, MySQL, MongoDB, Chroma, Redis

**Backend & Web Frameworks:** FastAPI, Next.js, Express.js, Gin

**Cloud & DevOps:** AWS, Google Cloud Platform, Docker, Kubernetes