

Ng Yu Hang

Applied AI & Analytics Student

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SUMMARY

Ng Yu Hang (Mervin) is an aspiring **AI Full-Stack Engineer** currently pursuing a Diploma in **Applied AI & Analytics** at Singapore Polytechnic.

He specializes in **LLM integration**, **prompt engineering**, and **content post-processing**, focusing on building intelligent, production-ready systems that combine **machine learning**, **web applications**, and **automation**.

Has extreme curiosity, adaptability, and structured problem-solving, aiming to bridge practical AI development with user-centric software solutions.

ACADEMIC BACKGROUND

Singapore Polytechnic

2024 – 2027

Diploma in Applied AI & Analytics | Current CGPA (As of Y2S1): 3.85 / 4.00

- Specializing in **Deep Learning**, **Machine Learning**, and **Data Analytics**.
- Proficient in analytical and visualization tools such as **Plotly**, **Matplotlib**, **Seaborn**, and **Tableau**.
- Consistently achieved **A / Distinction (Top 5%)** in AI-related modules including Deep Learning, AI & Machine Learning.
- Known for producing **modular**, **reproducible**, and **industry-grade workflows** in school coursework and projects.

Chung Cheng High School (Main)

2022 – 2023

Singapore-Cambridge GCE O-Level

NOTABLE ACHIEVEMENTS

Certified AI Trainer – AI Singapore

2025 – present

Selected under the *Youth AI Train-the-Trainer Programme* among hundreds of applicants, recognized for strong conceptual mastery and clear presentation of AI topics.

Additional Certifications

- *Google Cloud Skill Badges* – Data Analytics and ML with BigQuery
- *IBM SkillsBuild Certificates* – AI Fundamentals & Data Science for Business

EXPERIENCE

AI & Software Projects (Portfolio Work)

Project 1 – Quiz Slide Deck Generator

A full-stack **FastAPI** application that converts PDF/DOCX documents into structured mock exam slides and answer keys.

Integrates **OCR + NLP (LLMs)** for text extraction and question generation, and uses **ReportLab** for professional PDF layout with math rendering and tables.

Built for educators and students to generate practice materials rapidly and consistently.

Project 2 – Mock Paper Generator

A **FastAPI** tool that automates exam paper creation from PDFs/DOCX, powered by **OpenAI GPT-4o-mini** for context-aware question generation.

Implements custom **post-processing pipelines** for grammar polishing, LaTeX math alignment, and content structuring to ensure publication-ready outputs.

Project 3 – Document Q&A Chat Assistant

A full-stack app that lets users upload PDF/DOCX/TXT files and query them instantly using **LangChain + OpenAI Embeddings**.

Backend in FastAPI with session-based QA logic and frontend in Bootstrap chat UI, featuring typing animations and deployment on **Hugging Face Spaces**.

TECHNICAL SKILLS

Programming Languages

- Python (main language for AI & backend development)
- JavaScript
- HTML5, CSS3, SQL

Frameworks & Libraries

- FastAPI – backend API development
- LangChain – document QA / LLM orchestration
- TensorFlow, PyTorch – deep learning & model training
- Bootstrap – frontend UI / layout design
- Pandas, NumPy – data manipulation & ETL
- Scikit-learn – machine learning pipelines
- Matplotlib, Plotly – data visualization
- OpenCV – basic image processing

AI / LLM Integration Specialization

- OpenAI API (GPT-4 / 4o-mini)
- Prompt Engineering & Response Tuning
- Embedding-based Retrieval (RAG architecture)
- Content Post-Processing / Formatting / Sanitization
- OCR & NLP Pipelines for Document Automation

Tools & DevOps / Deployment

- Git / GitHub (version control & collaboration)
- Docker (containerization for backend services)
- Vercel (frontend deployment / Next.js hosting)
- Render (backend API hosting)
- Hugging Face Spaces (model / app deployment)

Databases & Storage

- MySQL (relational database queries and ETL integration)

SOFT SKILLS

- Open-Minded and Collaborative
- Calm and Adaptable under Pressure
- Resourceful and Analytical Problem Solver
- Driven to Refine and Iterate on Solutions
- Eager to Learn and Apply New Technologies

ADDITIONAL INFORMATION

Portfolio Website: <https://ngyuhang.com>

Languages: English (Proficient), Chinese (Native)