

# Amirul Azizol

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## OVERVIEW

Early-career machine learning engineer based in Singapore with a software and research foundation. Experienced in NLP and LLM pipelines, scalable backend systems; interested in computational linguistics, computer vision, and applied ML.

## TECHNICAL SKILLS

**Languages:** Python, Java, JavaScript/TypeScript, Go, SQL, Dart

**Frameworks/Tools:** Angular, React.js, Spring Boot, FastAPI, Flutter, Firebase, Docker, AWS (S3, Lambda)

**Libraries:** Pandas, Numpy, Transformers, Langchain, OpenCV, Ray, PyArrow, Joblib

## EXPERIENCE

### Language Engineer

Apr. 2025 – Present

Confidential Big Tech Company (contracted via TransPerfect)

Singapore

- Worked under the voice assistant team, focusing on Malay and Indonesian locales.
- Coordinated with translators and data annotators to create multilingual datasets for NLU, ASR, TTS, and agentic LLM 🧠 voice assistant pipelines.
- Fine-tuned BERT and T5-based models for intent and domain classification, and developed execution routing models (on-device vs server), improving Malay/Indonesian understanding accuracy by **25%**.
- Automated data preprocessing, evaluation, and error analysis pipelines on localized datasets, improving parse recall and intent classification coverage with minimal regressions.

### Software Engineer Intern

Jan. 2024 – Jun. 2024

Wavelet Solutions

Kuala Lumpur, Malaysia

- Contributed to the core platform and infrastructure for Akaun ERP 🧠, supporting 1M+ monthly transactions.
- Developed, tested, and deployed a general UI setting across 10+ modules, impacting thousands of users.
- Refactored a Flutter mobile app to improve performance, cutting media load times by 50%.
- Built queue tables and job processors to migrate 5M+ legacy records to a centralized datalake.
- Performed 20+ micro-frontend deployments of production apps using AWS services (S3, Lambda).
- Updated and maintained various CRUD RESTful APIs using Java with Spring Boot.

### Other Internships

- Firmware Engineer, Western Digital: Performed failure analysis and fixes for high-priority firmware bugs.
- Technical Consultant, Monash Warwick Alliance: Automated accounting workflows for a local tutoring company.

## PROJECTS

### LLM with RAG for VQA (FYP) 🧠

July 2024 – Jan. 2025

- A custom multimodal LLM for answering medical and forensics questions with retrieval-augmented generation.
- Fine-tuned the 9B mPLUG-Owl3 model to answer VQA prompts with RAG - achieved **66%** accuracy on a custom dataset, almost double compared to the base model.
- Uses a custom chunking algorithm with Gemini for contextualizing and summarizing texts during RAG uploads.
- Implements a hybrid retrieval mechanism based on cosine similarity and keyword matching.

### RxNet 🧠

July 2024 – Aug. 2024

- Finalist** at APU Devmatch and **cash prize winner** at Monash Hackfest.
- A blockchain prescription system built on MasChain / Solana to improve drug traceability and reduce fraud.

### Ren 🧠

Dec. 2023 - Jan. 2024

- Top 10 Finalist** at Kitahack 2024 (Google Solution Challenge).
- A mobile app using Flutter and Firebase as a platform for environmental community engagement.

## EDUCATION

### Monash University

2022 – 2024

Bachelor of Computer Science, Major in Advanced CS, Minor in Cybersecurity

Kuala Lumpur, Malaysia

- GPA: 3.92 — WAM: 87.1
- Recipient of Monash High Achiever Award (top 1% of cohort) and Industry Based Learning scholarship.
- Worked as a TA for 2 years, teaching Theory of Computation (FIT2014) and Intro to Programming (FIT1045).