

# Amirul Azizol

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## OVERVIEW

Machine learning engineer based in Singapore with a research and software engineering foundation. Experienced in computer vision, NLP/LLM pipelines, and scalable backend systems.

## TECHNICAL SKILLS

**Languages:** Java, Go, Python, TypeScript/JavaScript, SQL, C++, Swift

**Infrastructure & Tools:** AWS, GCP, Docker, Kubernetes, Jenkins, CI/CD, PostgreSQL, Git

**Frameworks:** Langchain, Spring Boot, FastAPI, React, Next.js, Node.js, Angular

**Machine Learning:** PyTorch, Transformers, Ray, PyArrow, LanceDB (RAG)

## EXPERIENCE

### Machine Learning Engineer

Apr. 2025 – Present

Singapore

*TransPerfect*

- Drove NLU, ASR, TTS for a big tech voice assistant (**500M+** users) to improve Malay language performance.
- Fine-tuned transformer-based models and resolved **300+** intent detection bugs. (PyTorch, Ray)
- Shipped **50+** localized features by implementing new logic, triaging bugs, and validating integration tests.
- Constructed high-quality datasets for low resource languages (Malay, Indonesian) for 14 domains (10K+ lines).
- Designed and implemented rule-based filtering heuristics that reduced overall dataset noise by **23%**.
- Deployed and monitored fine-tuned models in a live environment to diagnose failures. (Kubernetes)
- Built an automated end-to-end test suite, reducing manual QA effort by **90%**. (Python, Swift)
- Rearchitected internal tooling to use multithreading, achieving a 5x speedup. (C++)

### Software Engineer Intern

Jan. 2024 – Jun. 2024

Kuala Lumpur, Malaysia

*Wavelet Solutions*

- Optimized infrastructure and ensured reliability for an ERP processing **1M+** monthly financial transactions.
- Engineered asynchronous ETL job processors to migrate **5M+** records to a centralized data lake. (SQL, AWS)
- Designed RESTful APIs using Spring Boot, enforcing strict error handling to meet a **99.9%** uptime SLA. (Java)
- Developed and deployed a UI module for 10+ applets, adopted by thousands of enterprise users. (Angular)
- Refactored a mobile app to improve performance and cut page loading times by 30%. (Flutter)

### Embedded Software Engineer Intern

Nov. 2023 – Jan. 2024

Kuala Lumpur, Malaysia

*Western Digital*

- Engineered C++ firmware features and Python failure analysis scripts for enterprise HDDs. Reduced the host interface team's bug backlog by **21%**.
- Optimized Jenkins CI/CD pipelines by improving retry logic, reducing false positive build failures.

## PROJECTS

### Multimodal, Domain Specific LLM with RAG

- Awarded 2nd best final year project in cohort for research potential in medical imaging.
- Fine-tuned an 8B vision-language model, improving accuracy by **30%** over baseline by integrating RAG and CoT.
- Architected a vector database with a custom chunking algorithm and a hybrid retrieval algorithm.

### RxNet

- Built a decentralized prescription tracking system with smart contracts to prevent fraud and improve traceability.
- **Finalist** at APU Devmatch and **cash prize winner** at Monash Hackfest.

### Ren

- Developed a gamified environmental community app, ranked Top 10 at Kitahack (for Google Solution Challenge).

## EDUCATION

### Monash University

Feb. 2022 – Apr. 2025

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

- **GPA: 3.92/4.0** | WAM: 87.1 (Top 1% of Cohort)
- Awards: Monash High Achiever Award, Industry Based Learning Scholarship.
- Teaching Assistant: Theory of Computation (FIT2014) & Intro to Programming (FIT1045).