Michael Liem

Software Engineer

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SUMMARY

Software Engineer with 4+ years in backend development and AI/ML systems, building scalable microservices and deploying production AI models on cloud infrastructure. Completing M.S. in Computer Science at National Taiwan University of Science and Technology (Expected August 2026).

EXPERIENCE

AI Software Engineer

Frontier.cool 2024/04 - Present

- Deployed and served production AI models on AWS Lambda and RunPod, supporting high-throughput inference workloads at scale
- Built a serverless ML pipeline with Python, FastAPI, DynamoDB, Typesense, and Qdrant, reducing infrastructure costs through right-sized serverless architecture
- Automated a Blender-based 3D rendering pipeline replacing an existing manual process, then migrated it to serverless cloud GPU infrastructure for scalable production use
- Integrated multiple LLM providers (OpenAI, Google) via LangChain and LangGraph, implementing provider fallback mechanisms to improve API reliability and control costs
- Containerized model deployments with AWS ECR and S3, enabling versioned releases and reliable production updates

Backend Engineer

Wide Technologies Indonesia 2022/03 - 2024/02

- Architected a microservices backend with Flask and Nameko to digitize palm oil plantation operations across harvesting, evacuation, inspection, and maintenance workflows
- Built a TCP/TLS IoT gateway in Go for Teltonika GPS devices, enabling real-time fleet tracking with integrated fuel, weight, door, GPS, and camera sensors across remote plantation sites
- Implemented fuel and cargo monitoring logic with movement-variance compensation, detecting unauthorized refueling, fuel theft, and cargo theft via weight sensor analytics
- Designed a dual-database architecture with MongoDB for high-throughput GPS ingestion and PostgreSQL for multi-tenant device mapping (truck plates to device IMEIs)

Machine Learning Intern

ProcodeCG 2020/09 - 2020/12

- Built an Age and Gender Classifier with TensorFlow and OpenCV for real-time targeted advertising
- Designed a data preprocessing pipeline with batching and augmentation to improve model training efficiency
- Deployed a Flask inference API serving real-time predictions to a production advertising platform

EDUCATION

Computer Science 2024/02 - 2026/08

National Taiwan University of Science and Technology - Master of Science (M.S.) • Full Tuition Fee Waiver

Computer Engineering 2017/09 - 2021/12

Binus University - Bachelor of Science (B.Sc.) • Partial Tuition Fee Waiver

SKILLS

Programming Languages	Python, Go, JavaScript, C, Java, Kotlin
Backend Frameworks	FastAPI, Flask, Nameko, Huma, Fiber, Spring Boot, Express.js
AI/ML Frameworks	PyTorch, TensorFlow, OpenCV, LangChain, LangGraph
ORM/SQL Builder	SQLAlchemy, GORM, go-jet
Databases	PostgreSQL, MongoDB, DynamoDB, Qdrant, Typesense, RabbitMQ
Frontend Frameworks	React, Next.js, Tailwind CSS
DevOps and Tools	Docker, Git, GitLab CI
Cloud Platforms	AWS (S3, ECR, DynamoDB, Lambda), GCP, RunPod

PROJECT PORTFOLIO

Government Dashboard System for Maritime School

Built a full-stack admin platform with Next.js, Express, and PostgreSQL featuring RBAC, real-time reporting dashboards, and automated administrative workflows for a maritime school's student and staff management.

Point of Sales System with IoT Billiards Management

Built a POS platform with React, FastAPI, and PostgreSQL for a combined restaurant and billiards venue. Integrated QR-code ordering, IoT-controlled lamp panels for real-time table occupancy, time-based automated billing, and digital queue management.

Landing Pages for Small Businesses

Designed and delivered landing pages for small businesses using React and Tailwind CSS, optimizing for performance, SEO, and mobile-first responsiveness.

LANGUAGES

Chinese	Basic
Bahasa Indonesia	Native
English	Fluent