MUHAMMAD FAZA PINARINGGI

AI Engineer · AI Agents & LLM Applications · Full-stack Product Engineering

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Portfolio: **fazapinaringgi.com** | Live work: semarlanguage.com · ooh.co.id · jobpmi.co.id · oohmiracle.au

SUMMARY

AI Engineer who builds LLM-powered features and AI agents for real users. Since July 2026 the sole engineer for four web products at OOH Group, including SemarLanguage, a paid language-test platform where Claude and OpenAI Whisper power IELTS Writing and Speaking scoring. Built a Gemini agent prototype with function calling for a team that won 1st place in an internal corporate AI competition. Focused on AI throughout university: an Intelligent Systems (AI) specialization in the Bachelor's, now a fast-track Master's in Computer Science specializing in Data Science (GPA 3.93) at BINUS University, and co-author of two papers in *Procedia Computer Science* (Elsevier).

EXPERIENCE

AI Engineer & Full-stack Web Developer
Jul 2026 – Present

PT OOH Kupu Kupu Global (OOH Group), Indonesia

Sole engineer for four of the group's web products, owning architecture, releases, and production databases.

SemarLanguage (semarlanguage.com) – *AI-scored language pre-tests and courses*

- Took the platform from concept to a paid service (Next.js, TypeScript, Supabase/PostgreSQL, Vercel), now 68 pages and 27 database tables.
- Designed an AI scoring engine for all four IELTS skills: Claude scores Writing against the official IELTS criteria, Whisper transcribes Speaking, and Listening/Reading are scored by rules at zero AI cost.
- Calibrated the Writing scorer on 46 band-scored reference essays (mean bias of −0.15 band) and traced inflated scores, found by comparing against real IELTS certificates, to six root causes, fixing five.
- Built bank-transfer payments with admin verification and a learning platform with mock exams and QR-verified certificates.
- Set up GitHub Actions CI (secret scan, type check, automated tests, build), reviewed and merged 60 pull requests, and cut median server response time from up to 1.7 s to 0.55 s.

ooh.co.id – *Australian work and holiday visa preparation site and member area (Laravel)*

- Took over the inherited site without access to the old server: rebuilt the hosting, moved the code to GitHub, and wrote a one-command deploy script.
- Upgraded Laravel 10 → 12 and cleared all 48 known security advisories, backed by a test suite grown to 819 test methods.
- Built rule-based lead scoring, invoicing, a Midtrans payment integration (sandbox-tested), single sign-on to SemarLanguage, and ad tracking that sends no personal data.

jobpmi.co.id and oohmiracle.au – *overseas job portal and Australian B2B site (Laravel)*

- jobpmi.co.id: migrated the production database with zero row mismatches across 18 tables, upgraded to Laravel 12, and restricted applicant documents to their owners.
- oohmiracle.au: fixed silent server errors, rebuilt it as a nine-page B2B site, upgraded to Laravel 12, and added a Content-Security-Policy and tested database backups.

PROJECTS

Simpul: AI Data-Hub Prototype with Gemini Agents
2026

10-day build for a team in an internal corporate AI competition; the team won 1st place. Live prototype: simpul-prototype-lemon.vercel.app

- Built a React/TypeScript prototype with serverless Gemini endpoints; the analyst agent answers through function calling over 14 query tools, so every number is computed by code rather than generated.
- Tested on 8 messy distributor files (simulated data): recognised every file type and automatically mapped 91% of columns and 95% of outlet names, with no wrong merges.

Master's Thesis: Uncertainty-Aware Multi-Teacher Knowledge Distillation for Chest X-Ray Classification 2025 – Present

- Trained three teacher models (DenseNet-121, ResNet-50, RAD-DINO ViT) on 112,120 NIH chest X-rays; the best reaches mAUC 0.840, on par with CheXNet (0.841).
- Distilling them into a lightweight EfficientNet-B0 student that weights each teacher by its uncertainty.

Financial News Sentiment Analysis 2025

- Fine-tuned and compared RoBERTa, FinBERT, and BiLSTM for 3-class financial news sentiment; general-purpose RoBERTa performed best (82.8% accuracy), ahead of domain-specific FinBERT (81.0%).

Plant Disease Detection 2024

- Built and deployed a Gradio web app on Hugging Face Spaces where users upload a leaf photo and get one of 38 plant-health classes with a confidence score, served by a TensorFlow model on Google Cloud.

PUBLICATIONS

Dzaky, J. D., **Pinaringgi, M. F.**, Purnomo, F., & Prasetyo, A. (2025). *3D Dynamic Flood Visualization System with AI-based Prediction Using LSTM, ANUGA and Leafmap for Jakarta Urban Area.* ICCSCI 2025, Procedia Computer Science (Elsevier).

Wijaya, M. G., **Pinaringgi, M. F.**, Zakiyyah, A. Y., & Meiliana (2024). *Comparative Analysis of Machine Learning Algorithms and Data Balancing Techniques for Credit Card Fraud Detection.* ICCSCI 2024, Procedia Computer Science (Elsevier). Oral presenter.

EDUCATION

Bina Nusantara University – Master of Computer Science, Data Science Specialization 2025 – Present

Fast-track program · GPA 3.93 / 4.00 · Thesis on uncertainty-aware knowledge distillation for medical image classification

Bina Nusantara University – Bachelor of Computer Science, Intelligent Systems (AI) Specialization 2022 – 2026

S.Kom. · GPA 3.59 / 4.00

SKILLS

AI / LLM: AI agents (function calling, tool use), prompt engineering, LLM evaluation against human-scored references, Anthropic Claude API, Google Gemini, OpenAI Whisper

Machine learning: PyTorch, TensorFlow/Keras, Hugging Face Transformers, scikit-learn, XGBoost; CNNs, Vision Transformers, LSTM

Software: Python, TypeScript, JavaScript, PHP, SQL; Next.js, React, Laravel; PostgreSQL (Supabase), MySQL; REST APIs, payment and single sign-on integration

Delivery: Git, GitHub Actions CI, Vercel, Linux servers, Gradio, Hugging Face Spaces; automated testing (Vitest, Playwright, PHPUnit)

CERTIFICATIONS

Microsoft Applied Skills: Generate reports with AI research agents – Microsoft, Nov 2026 (hands-on lab assessment)

ORGANIZATIONS & VOLUNTEERING

Volunteer educator in digital literacy, basic coding, and study skills, Christian Eunike Orphanage Foundation, Semarang (2022–2024); volunteer mathematics teacher, Srondol Wetan 05 Primary School, Semarang.

HIMTI Informatics Student Association (2022–2024); Freshmen Partner mentor, BINUS University (2022–2023).