

MOCH. AVIN

Cloud Engineer | Software Engineering | DevOps

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WORK EXPERIENCE

Cloud Engineer

Jun 2026 - Present

PT. Astra Graphia Information Technology (AGIT)

- Maintained and improved Azure infrastructure for enterprise clients, including incident response, platform migration, disaster recovery, and system upgrades.
- Handled technical escalations involving connectivity, backup and restore, and cloud resource optimization.

Frontend Developer

Jan – Jul 2026

PPDB Jawa Timur

- Contributed as a member of the frontend team and reviewed pull requests.

Software Engineering & Data Engineering

Jan - Dec 2025

PT. Dharma Lautan Utama | Surabaya, Indonesia

Data Engineer - Onsite Internship

Sep - Nov 2025

- Built a Google Apps Script pipeline collecting 500,000+ INAPORT shipping log rows covering 2019-2024; transformed HTML/Excel sources into consolidated yearly datasets.

Software Engineer - Project-Based, Remote

Jan - Jun 2025

- Delivered a lecturer-led project replacing paper records with a Laravel Blade and PostgreSQL logging system.
- Worked as the sole frontend developer in a four-person agile team with one lead and two backend engineers.

Frontend Developer

Jan - Dec 2025

MyITS Student Organization - ITS | Surabaya, Indonesia

- Migrated Laravel frontend to Next.js, reducing DOMContentLoaded time from 765 ms to 265 ms.
- Built Chakra UI interfaces and multi-role permissions for administrators, student organizations, and staff; delivered features from setup to deployment using Bitbucket and Jira.

Frontend Developer

Jan - Jul 2025

SPMB 2025 Jawa Timur - ITS | Surabaya, Indonesia

- Maintained a Next.js admission portal serving 600,000+ total users in a five-person frontend team.
- Integrated APIs and admission policy changes; improved stability and performance through code splitting, lazy loading, and state management.

Frontend Developer

Aug 2024

SIAR HALAL - ITS | Surabaya, Indonesia

- Optimized Next.js 13 and Tailwind CSS code; integrated 8thWall and Three.js for AR game features.

Frontend Developer

Aug 2024

Mental Health Support Web Application | Surabaya, Indonesia

- Built responsive Shadcn UI layouts and collaborated with backend engineers on API integration.

Frontend Developer Intern

Mar - Dec 2024

MyITS Academics - DPTSI ITS | Surabaya, Indonesia

- Built Chakra UI components for the academic system migration, including the Mata Kuliah Umum module; collaborated through Bitbucket and Jira in a team separate from MyITS Student Organization.

EDUCATION

Bachelor of Engineering in Informatics

Aug 2022 - Aug 2026

Sepuluh Nopember Institute of Technology (ITS) | Surabaya, Indonesia

GPA: 3.92/4.00

InstaApp - CI/CD Pipeline & VM Deployment

github.com/mochavin/instaapp

- Built a Laravel/Inertia.js application and GitHub Actions workflows for push/pull request checks using ESLint/Prettier, TypeScript/PHPStan, and Pest/PHPUnit.
- Automated releases, dependency installation, Vite builds, and database migrations. Configured Ubuntu, secure SSH, Nginx, SSL/TLS, zero-downtime deployment, and Systemd/Supervisor queue workers.

Database Indexing Benchmark Suite

github.com/mochavin/db-indexing-benchmark

- Orchestrated Node.js, PostgreSQL, and MySQL with Docker Compose. Automated seeding for 100,000 users and 1,000,000 transactions, index management, and nine query-pattern benchmarks.
- Used k6 to analyze RPS, P95/P99 latency, and errors, generating JSON/HTML reports. Reduced MySQL status-filter latency 98.5% (1,560.99 to 22.82 ms), MySQL range-query latency 62.9% (59.22 to 21.96 ms), and PostgreSQL status-filter latency 45.8% (34.77 to 18.84 ms).
- Documented query-specific index overhead. Results: mochavin.github.io/db-indexing-benchmark.

Laravel 12 Benchmark - FPM vs. Swoole vs. FrankenPHP

github.com/mochavin/fpm-vs-swoole-vs-franken

- Benchmarked three PHP runtimes with Docker Compose and k6 at 5,000 concurrent virtual users across health checks, database reads/writes, and CPU-bound operations.
- Configured OPcache, JIT, and Nginx; automated execution and reporting with PowerShell/Bash.

Cloud Computing & Microservices Labs

github.com/mochavin/komputasi-awan

- Reduced Python, Go, and PHP Docker images from approximately 1 GB to 100 MB or less through multi-stage builds, layer caching, and removal of build dependencies.
- Configured Nginx gateways, load balancing, security headers, and local self-signed HTTPS. Deployed services with bridge networks, persistent volumes, health checks, restart policies, and logging.

Cloudflare Workers OpenAPI - Serverless Edge API

github.com/mochavin/worker-proxy-chat-porto

- Deployed an API for avin.my.id with Wrangler CLI, achieving sub-50 ms response times. Managed secrets, environment settings, and version-controlled routing in `wrangler.jsonc`.
- Implemented OpenAPI 3.1 validation, interactive documentation, and standard errors; used platform scaling, rollback, SSL termination, and DDoS protection.

OMEDSCOPE - AI-Powered Otitis Media Detection System

- Team Lead, ML & Cloud Infrastructure Engineer | February - October 2024. Led five members across software, hardware, research, milestones, and prototype delivery; secured project funding.
- Curated 200 images across five classes (normal and otitis media stages 1-4). Built a Python/TensorFlow VGG-16 classifier achieving 85.42% accuracy.
- Integrated Raspberry Pi 4, endoscopy camera, LCD, and battery with a Laravel dashboard. Deployed Flask API and TensorFlow inference on Azure VMs with NSGs, VNet isolation, and static IP.
- Connected devices through REST APIs; implemented model versioning, batch inference, monitoring, alerts, and automatic restarts.

Interactive CNN Visualizer & Training Platform

github.com/mochavin/cnn-visualizer

- Built a React/TypeScript/TensorFlow.js application training CNNs on 1,000 or 60,000 MNIST images entirely in the browser, with adjustable hyperparameters and live training charts.
- Implemented model save/load, drawing-based predictions, confidence scores, feature maps, filter inspection, CAM, and network diagrams; pretrained model achieved 99% MNIST test accuracy.
- Live demo: mochavin.github.io/cnn-visualizer.

Hybrid Movie Recommendation System

github.com/mochavin/ML-system-recommender

- Combined genre TF-IDF/cosine similarity with neural collaborative filtering on 9,742 movies, 100,836 ratings, and 610 users. Used embeddings, bias terms, normalized ratings, and an 80/20 split.
- After 16 epochs: validation MAE 0.1425 and RMSE 0.1850 on normalized ratings (training: 0.1300 and 0.1700). Content-based Precision@10: 0.50; Recall@10: 0.625.

Pumpkin Seed Quality Classification

- Built a Random Forest pipeline for 2,500 seed samples, achieving 87.5% F1-score during the IDCamp 2023 Expert Machine Learning course.

TECHNICAL SKILLS

Programming: Python, TypeScript, C++, PHP, SQL, Kotlin

Frontend: React.js, Next.js, Tailwind CSS, Chakra UI, Shadcn UI, Laravel Blade

Backend & Databases: Laravel, FastAPI, Flask, Node.js, PostgreSQL, MySQL, SQLite, MongoDB, Firebase

CI/CD & Containers: GitHub Actions, GitOps, automated testing, static analysis, shell scripting, Docker, Docker Compose, multi-stage builds, networking, volumes, Kubernetes basics

Cloud Operations: Incident response, migration, disaster recovery, backup and restore, connectivity troubleshooting, resource optimization

Performance: k6, load/stress testing, database indexing, query optimization

Data & ML: TensorFlow, TensorFlow.js, Keras, Scikit-learn, Pandas, NumPy, Matplotlib, Gymnasium; CNNs, transfer learning, computer vision, NLP, embeddings, recommender systems, explainable AI, reinforcement learning

Data Engineering & MLOps: ETL, preprocessing, feature engineering, dataset curation, model evaluation, hyperparameter tuning, model serving and versioning

LEADERSHIP & ACTIVITIES

Administrator

Jan 2024 - Aug 2026

Algorithms and Programming Laboratory - ITS

- Coordinated materials for Data Structures, Fundamental Programming, and Framework Programming; managed grading workflows and instructor-student communication.
- Mentored 50+ students on graph theory, BFS/DFS, dynamic programming, and tree traversal.

Class Coordinator / Teaching Assistant

Aug - Dec 2024

Fundamental Programming - ITS

- Supervised teaching assistants, class activities, and assignment reviews; organized tutorials and code reviews.

Expert Staff

Mar - Dec 2024

NLC - SCHEMATICS ITS

- Created and tested national logic competition problems, ensuring accuracy and quality.

Teaching Assistant

Feb - Jun 2024

Data Structures - ITS

- Guided students on core data structures, implementation, assignments, and problem-solving.

Teaching Assistant

Aug - Dec 2023

Fundamental Programming - ITS

- Taught programming fundamentals and facilitated code review sessions.

ACHIEVEMENTS & AWARDS

- **2nd Place - IOC Forum & Hackathon AI/ML Hulu Migas 2026 (SKK Migas)** | July 2026. Led a team applying reinforcement learning to resource-constrained project scheduling (RCPSP) for oil and gas turnaround maintenance.
- **IDCamp 2024 Scholarship - Expert Android Developer Class** | Dicoding | June 2025
- **Bronze Medal - PIMNAS 37, Poster Category, PKM-KC** | October 2024
- **DBS Foundation Coding Camp Scholarship - Expert Front End Web Developer** | September 2024
- **IDCamp 2023 Scholarship - Expert Machine Learning Development** | Dicoding | February 2024
- **Programming Contest Finalist:** Joints, UGM (May 2023); Schematics, ITS (October 2022); Arkavidia, ITB (February 2022).
- **National Science Competition Finalist - Mathematics** | Indonesia Ministry of Education | November 2021

COURSEWORK & ADDITIONAL TRAINING

ITS: Data Structures, Fundamental/Framework Programming, Software Engineering, Design & Analysis of Algorithms, Operating Systems, Computer Networks, Database Systems, Cloud Computing, Machine Learning, Deep Learning, Statistics & Probability, Linear Algebra, Calculus.

Dicoding: Frontend, Android, and machine learning coursework, including regression, classification, NLP, and TensorFlow CNN projects.

Interests: Healthcare AI, medical imaging, explainable AI, on-device ML, AI for social impact, infrastructure as code, and container orchestration.