

Engineering leader with 10+ years building AI/ML systems, secure platforms, and scalable backend infrastructure across e-commerce, fintech, and data marketplace domains. Specialized in architecting intelligent systems that balance innovation with security, compliance, and reliability. Expert in fraud detection, MLOps, data engineering, and leading cross-functional teams to deliver high-impact solutions.

SKILLS

Programming Languages	Java, Python, Go, Scala, C/C++, Groovy, JavaScript, Shell Script
Frameworks/Libraries	FastAPI, Flask, Spring MVC, Spring Boot, Play, Gorilla Mux
Database Systems	MySQL, MongoDB, PostgreSQL, HBase, Elasticsearch, Cassandra
Tools & Platforms	Apache Kafka, RabbitMQ, Apache Spark, Airflow, scikit-learn, Akka, PyTorch, TensorFlow, Jenkins, Kubernetes, Vault, Consul, MLflow
Cloud Platforms	Google Cloud Platform, Huawei Cloud
Operating Systems	GNU/Linux, macOS
Languages	Bahasa Indonesia (native), English

PROFESSIONAL EXPERIENCE

VP Engineering & AI

jejakin.com

May 2024 — Present

Carbon Credit & ESG SaaS Platform

- Lead full engineering organization: software engineering (backend/frontend), DevOps, security, QA, AI/ML, data engineering, and data science teams. Mentor engineers, establish technical standards, and drive product quality across 3 core platforms.
- **Products:** Carbon Space (marketplace), Carbon IQ (emissions calculator, audit, ESG analysis), Carbon Atlas (end-to-end project management: pre-feasibility → feasibility → MRV per VERRA, GS, SRN, and ESG standards).
- Architected cloud-agnostic infrastructure and CI/CD pipelines for multi-product platform, improving deployment velocity and reducing vendor lock-in.
- Built self-hosted LLM system with RAG (Retrieval-Augmented Generation) on carbon standards (VERRA, SRN) for automated report generation, emission/carbon project data analysis, compliance validation, and client advisory.
- Architected blockchain-based carbon credit registry using Hyperledger Fabric to prevent double counting and double claiming in marketplace, ensuring credit validity and transparency.
- Developed multi-modal deep learning systems: (1) satellite imagery analysis for land cover classification, carbon stock calculation, deforestation alerts, and forest fire detection in MRV workflows, (2) audio ML for biodiversity monitoring detecting bird species from sound recordings, (3) computer vision for geotagged tree planting validation detecting duplicate images and misclassified species, preventing fraud and ensuring project integrity.
- Established comprehensive QA automation framework and security controls achieving ISO 27001:2022, ISO 27701:2019, Indonesia PII regulations, and OJK (Financial Services Authority) compliance.
- Unblocked enterprise B2B and B2B2C partnerships by architecting platform to meet diverse client regulatory and security requirements, enabling business to close deals with regulated enterprises.
- Architected and built internal apps using Rust, PostgreSQL, NATS Message System, OpenSearch, Ollama, and LangChain: Ticketing System (tickets, backlogs, sprints, Kanban board, timeline, AI-powered analysis), Centralized Knowledge Management System (docs, pages, AI analysis, summarization, document generator), and Virtual Office with 2D/3D graphics (rooms and user avatars) for real-time collaboration.
- Designed internal Human Capital Apps (Go backend): leave, presence/absence, KPI, 360-degree feedback, and performance review — reducing paid third-party app costs by 45%.
- Designed plantation traceability system utilizing Hyperledger Fabric for EUDR (EU Deforestation Regulation) compliance, with warroom monitoring dashboard for plantation conditions and analytics.
- Drove AI adoption across Tech and non-Tech teams, optimizing productivity through AI-assisted workflows and tooling.
- Built fraud detection system for partner onboarding/monitoring ensuring reforestation projects meet carbon standards and timelines.
- Secured \$200K+ Google Cloud credits; optimized cloud costs while maintaining reliability and security posture.

Principal R&D & Head of Data

PT. Akart Inti Data (nusadata.ai)

Oct 2022 — Apr 2024

Data Marketplace & Analytics Platform

- Led 15+ engineers building AISight (advanced analytics platform) and nusadata.ai marketplace, processing 10B+ mobility records (2TB) and 130M+ demographic profiles.
- Architected cloud-agnostic big data platform (Spark, Kafka, Airflow) supporting PT. Pertamina Retail's 3TB transaction analytics (scaling up to 3x during Ramadan/mudik season) and multiple enterprise clients.
- Designed and deployed Encryption-as-a-Service (Secret Base) for data-in-use protection and integrated SMPC for privacy-preserving analytics, ensuring UU PDP compliance.

- Built ML-powered fraud detection system (rule-based + deep learning) and geospatial analytics for retail site selection and billboard performance optimization.
- Reduced infrastructure costs through architecture redesign while maintaining 99.9% uptime. Migrated critical workloads from GCP to Huawei Cloud.
- Achieved ISO 27001:2022 certification and established engineering best practices (CI/CD, code reviews, OKRs) across teams.
- Architected payment switching platform integrating 50+ apps for data monetization with consent management and compliance controls.

Technical Lead

Finantier.co

March 2022 — Oct 2022

Open Finance Platform (Series A Fintech)

- Re-architected core platform for 3x performance improvement by implementing async processing and optimizing database queries.
- Built centralized encryption service using HashiCorp Vault with multi-policy data-in-use encryption based on PII classification.
- Developed internal Golang SDK for encryption/decryption, improving developer velocity and ensuring security compliance across services.
- Designed and shipped credit scoring and eKYC products integrating multiple financial data sources with subscription-based monetization.
- Mentored backend engineering team on system design, code reviews, and platform architecture decisions.

Software Architect Consultant (Part-time)

rumayshoacademy.com

June 2021 — Present

Islamic Education Platform

- Architected and built online learning platform from scratch (Vue.js, Kotlin/Spring Boot, MongoDB, Elasticsearch) serving 10K+ students.
- Scaled exam system to support 3K concurrent users through async processing, caching optimization, and load balancing.
- Recruited and built engineering team from zero; established agile processes, CI/CD pipelines, and infrastructure on VPS.
- Designed unified payment gateway integrating Midtrans for education and e-commerce use cases across multiple business units.

Principal R&D Engineer

Blibli.com

Oct 2019 — Feb 2022

AI & Developer Experience

- Led AI R&D initiatives building fraud detection and recommendation systems serving millions of daily transactions.
- Architected graph-based rule engine with microkernel design for promo abuse detection and return fraud prevention, reducing fraudulent transactions by 40%.
- Implemented Hidden Markov Model for dynamic collaborative filtering, improving recommendation CTR by 25%.
- Established company-wide DevEx platform: migrated CI/CD from Bamboo to Jenkins, standardized Docker images, and created pipelines for Java, Go, and Python reducing deployment time from hours to minutes.
- Researched and deployed custom string clustering algorithm for email-based fraud detection, 10x faster than existing solutions.
- Built real-time data pipelines using Kafka for ML feature engineering and model serving.
- Keynote speaker at Deep Learning Summit 2017 (Singapore): "Combating Fraudulent Transactions with Deep Neural Networks".

Senior Software Engineer

Blibli.com

Dec 2015 — March 2017

Fraud Detection Systems

- Built real-time fraud detection system processing 100K+ daily transactions using rule engine (Java/Spring) and ID-Tree algorithm.
- Led data migration from RDBMS to MongoDB (Scala/Akka) and search migration to Elasticsearch, improving query performance 5x.
- Refactored legacy codebase achieving 80%+ test coverage and SonarQube compliance.

Co-Founder & Data Scientist

PT. Starlabs Global Teknologi

April 2015 — November 2015

AI Research & Development

- Built deep learning library from scratch (Scala) implementing stacked autoencoders and Restricted Boltzmann Machines on Hadoop/Spark.
- Developed Averi: ML-powered Twitter account classifier for law enforcement. Won Indonesia ICT Award 2015 (R&D Category).
- Conducted macroeconomic forecasting research using deep neural networks for GDP prediction.

Software Engineer

Veritrans Indonesia (now Midtrans)

Feb 2014 — Jan 2015

Fraud Detection

- Built fraud detection API (Play Framework) using custom ML implementations (backpropagation, random forest) in Scala.
- Developed machine learning algorithms from scratch for payment transaction risk scoring.

Adjunct Lecturer (Part-time)

STMIK Tazkia & Universitas Komputer Indonesia

2012 — Present

- Teaching Artificial Intelligence, Machine Learning, Data Engineering, Algorithms, and Computer Vision courses.

EDUCATION

Master of Science in Informatics, Bandung Institute of Technology (ITB) 2012 — 2015

- Thesis: Deep learning for financial time-series prediction (published IEEE ICSET 2016).
- Indonesia ICT Award 2015 Winner (R&D Category) - ML-based social media analysis system.

Bachelor of Engineering in Informatics, Computer University of Indonesia 2007 — 2011

- Thesis: Computer vision hand tracking system using Lucas-Kanade algorithm (published).
- Indonesia ICT Award 2011 Merit Award; APICTA 2011 Nominee (Thailand).
- Programming Team Leader & Coach.

PUBLICATIONS & AWARDS

Analysis of Green Coding Effectiveness: Brute Force Algorithm Optimization with Heuristic Approach on Complex Computational Cases 2026

Journal Komputa, UNIKOM (In Publishing Process) | [Slides](#)

DNA Methylation Model for Early Lung Cancer Detection 2024

Bandung Int'l Conference on Medical & Health Science 2024 | [GitHub](#)

Deep Learning for Bank Repricing Gap Prediction 2016

IEEE ICSET 2016, ITB | [IEEE Xplore](#) | [GitHub](#)

Hand Tracking for Mouse Control Using Lucas-Kanade Algorithm 2012

Int'l Seminar on Regional Economic Development, Medan | [GitHub](#)

Conference Speaking

- Python Conference Indonesia 2025 - "Analysis of Green Coding Effectiveness: Brute Force Algorithm Optimization with Heuristic Approach" | [Slides](#)
- Deep Learning Summit 2017, Singapore (re:work) - "Combating Fraudulent Transactions with DNNs"