

# Muchamad Azwar Nurrosat

Software Engineer, 10+ YOY · Large-Scale Enterprise Distributed Systems

Tangerang Selatan, Banten, Indonesia

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## Summary

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Experienced Backend Software Engineer with 12+ years designing and shipping large-scale distributed systems for fintech, securities, and telco. Led backend teams at Stockbit, Tokopedia, and Telkomsel, owning trading platforms that processed 90,000+ orders at market open and telco platforms scaled from 45k to 350k+ daily transactions. Specializes in Go, system design, microservices, CI/CD automation, and end-to-end observability. Proven track record across high-throughput financial transaction processing and enterprise architecture.

Also has experience in iot and telemetry, to connect between embedded system and web services, so we can monitor sensor information via web dashboard. And also experienced for interfacing embedded system with desktop application. Other than that, i also experienced in integrating pattern recognition algorithm/formula with embedded system/sensors, one of the example is to build sign language recognition hardware, by combining flex sensors + accelerometer/gyro and desktop apps as the core logic processing, to handle realtime sign language recognition system, by calculating sensor information to match correct sign language interpretation.

## Skills

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**Languages:** Go, PHP, Node.js, Python, SQL, Java SE

**Backend & Architecture:** Microservices, Clean Architecture, System Design, Enterprise Architecture, GraphQL, REST, FastAPI, ISO 8583, Kafka, Message Queues

**Data & Storage:** MySQL, PostgreSQL, Oracle, Microsoft SQL Server, Cassandra, Redis

**DevOps & Observability:** Docker, Nginx, Ansible, CI/CD, Prometheus, Grafana Stack, Datadog, New Relic, OpenTelemetry

**AI/ML:** Large Language Models (LLM), Optical Character Recognition (OCR), OpenCV, Digital Image Processing, Pattern Recognition, Model Context Protocol (MCP), ollama

**Domain:** FinTech, Securities Trading, Stock Trading Systems, Telco Switching, Core Switching, KYC/Onboarding, IoT

## Electricall Engineering Skills

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**Languages:** C++ for Arduino and AVR microcontrollers

**Protocol:** I2C, RS232, Ethernet, MQTT, HTTP

**Tools:** Altium PCB Designer ( single and double layer PCB designing ), Labcenter Proteus Simulator

**Past Projects:** Hand Motion Controll Arm Robot powered by arduino nano

## Experience

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### Head IT Core Business

*Korea Investment and Sekuritas Indonesia, PT*

**Jun 2025 – Present**

*Jakarta, Indonesia*

- Lead Back Office / Front Office integration between legacy and modern securities systems.
- Designed and implemented CI/CD automation pipelines, improving deployment reliability and engineering velocity.
- Established a comprehensive Grafana observability stack across services for end-to-end performance insights.
- Built the Kisi eIPO order management system, replacing manual workflows with automated end-to-end integration.

- R&D on OCR and image-quality pre-checking for client KYC, lifting onboarding success rate and reducing regulator rejections.

## **Lead Backend Engineer**

*Stockbit*

**Feb 2022 – Mar 2025**

*Jakarta, Indonesia*

- Designed and implemented high-performance backend services for stock trading, handling hundreds of thousands of daily transactions.
- Built end-to-end low-latency system architecture to sustain traffic spikes during market open.
- Led a backend engineering team to rebuild core trading services from scratch, migrating off a 3rd-party remote trading system to a new in-house platform for all Stockbit consumers.
- Scaled transaction throughput to deliver 90,000+ customer orders during market open.
- Delivered critical trading features: high-performance basket orders, leverage limit orders, Stockbit Syariah, GTC smart orders, and Stockbit Institution.

## **Senior Software Engineer**

*Tokopedia*

**Aug 2019 – Feb 2022**

*Greater Jakarta, Indonesia*

- Designed system architecture and authored technical documentation for internal backend services.
- Developed backend services for bulk product category migration at marketplace scale.
- Designed end-to-end data encryption architecture securing user data shared with 3rd-party partner APIs.
- Introduced Clean Architecture on internal backend service design.
- Implemented metrics and observability monitoring using Prometheus, Grafana, Datadog, and New Relic.

## **Manager IT Business Solution**

*KISEL (PT. Telkomsel Ekspresindo)*

**Oct 2018 – Jul 2019**

*Greater Jakarta, Indonesia*

*Tech Lead & Project Manager — API platforms, project control, system architecture.*

- **Smart Topup:** Telco & PPOB mobile app integrated with tCash (now LinkAja), deployed across all 8 KISEL clusters.
- **KISEL Host-to-Host:** Single API integrator for telco/PPOB billers used by all KISEL partners.
- **Kisel Telco Switching:** REST + ISO 8583 voucher distribution API, handling 300,000+ daily recharges.
- **Telkomsel USIM 4G Migration:** Web app & API covering 80M+ customer MSISDNs.
- Scaled platform from 45k to 350k+ daily successful telco transactions (8x growth).
- **Stack:** MySQL, Cassandra, PostgreSQL, Redis, PHP, Node.js, Java, Docker, Nginx.

## **Manager IT Application & Services**

*KISEL (PT. Telkomsel Ekspresindo)*

**Apr 2017 – Oct 2018**

*Greater Jakarta, Indonesia*

- Managed projects and led API development, FinTech application development, web apps, and technical direction.
- Owned core switching and PHP-based application services.

## **Staff IT Programmer**

*Telkomsel*

**Aug 2013 – Mar 2017**

*Semarang, Central Java, Indonesia*

- Built mobile apps, web apps, and backend web services.
- Developed IoT device interfacing for server-room monitoring and alerting (embedded C++).
- Created a mobile base-transceiver-station tracker to detect the nearest cell by LAC/CI.
- Built a loss-revenue prediction dashboard from base-transceiver-station downtime datasets.
- **Stack:** MySQL, PHP, Node.js, Java, C++.

## **Part-time Lecturer**

*Fastcampus IDN*

**Nov 2024 – Apr 2025**

*Remote*

- Authored and delivered an Indonesian-language course on microservices architecture and system design, walking students from monolith-to-microservices migration through a complete e-wallet build.

**Education**

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|---------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| <b>Bachelor of Engineering (BE), Electrical &amp; Electronics Engineering</b><br><i>Universitas Dian Nuswantoro</i> | <b>2017</b><br><i>Indonesia</i>        |
| <b>Electrical &amp; Electronics Engineering (coursework)</b><br><i>Diponegoro University</i>                        | <b>2006 – 2009</b><br><i>Indonesia</i> |