



Aditya Tri Kurniawan

Director & Chief Technology Officer — PT Machvory Digital Engineering

Yogyakarta, Indonesia · aditya.tri.kurniawan01@gmail.com · linkedin.com/in/aditya-tri-kurniawan

I build factory systems end to end: the sensor board and its firmware, the Modbus or OPC UA link that gets the signal out of the machine, the time-series backend behind it, and the screen a plant manager opens in the morning. At PT Machvory Digital Engineering I run engineering and the company. We have two platforms in production — **TNS** and **OPTIMUS** — covering 13 capability areas, and one Flutter app on Android and iOS. I am applying to the Apple Developer Academy because the native Apple side is the part of this I have not learned properly yet.

EXPERIENCE

Director & Chief Technology Officer PT Machvory Digital Engineering

Jul 2023 — Present
Yogyakarta · On-site

- Technical direction for two platforms now running in production: **TNS** for OEE, downtime, production and energy, and **OPTIMUS** for condition monitoring, predictive maintenance and CMMS.
- Split the products into 13 capabilities that each stand on their own. A plant can buy energy monitoring for six machines and nothing else, then grow from there.
- Wrote the connectivity layer: Modbus RTU/TCP, OPC UA and MQTT into PLCs, power meters and SCADA that are already installed. Nobody has to replace equipment to start.
- Shipped **TNS Energy Mobile** (Flutter, Android 8+ / iOS 12+). It asks for one permission, INTERNET. No camera, location, storage or contacts.
- Two 3D digital twin viewers running on the plant's own CAD geometry, with live asset status bound onto the model.
- Set the rule the team writes analytics to: any score, forecast or rupiah figure has to show the arithmetic and the baseline behind it. If two screens disagree, that is a bug.
- Hardware alongside the software. IoT node and accelerometer boards from schematic through BOM sourcing to commissioning on live machines.
- Hiring, technical interviews, and code review for the engineering team.

Senior Researcher PT Jarvis Teknologi Albarokah

Jan 2021 — Apr 2024
Yogyakarta · On-site

- Embedded systems and electrical engineering research: signal acquisition, sensor interfacing, and firmware for industrial measurement hardware.
- Three years close to the physical layer. It is why I fix data-quality problems at the sensor now instead of smoothing them over in the dashboard.

SELECTED DELIVERY

- Vibration and temperature sensor installation at PT Jarvis Teknologi Albarokah.
- Sample vibration sensor and energy monitoring deployment at PT Astra Honda Motor.
- **machvory.co.id** — the company site and the CMS behind it. Next.js 14, Prisma and MySQL, role-based admin access, first-party analytics, and a lead pipeline with server-side attribution. Docker behind nginx.
- A 24-second looping hero film for that site, built in Blender on Machvory's own production-hall model, using real product screenshots rather than invented HUD graphics.

TECHNICAL SKILLS

Mobile & Apple platforms

Flutter Dart iOS build & release
Android

Embedded & hardware

C / C++ STM32 ESP32 Firmware
KiCad Schematic & PCB

Industrial connectivity

Modbus RTU/TCP OPC UA MQTT
PLC integration SCADA

Software & data

TypeScript React Next.js Node.js
Python Prisma MySQL
Time-series pipelines

AI & analytics

Anomaly detection Machine learning

3D & visualization

Digital Twin three.js Blender

Delivery

Docker nginx On-premise & cloud

EDUCATION

Universitas Mercu Buana Yogyakarta
[Program & year — fill in]

DOMAINS

Manufacturing Automotive
Food & Beverage Process Industry

What I have built

Four projects, from the copper up to the screen. Screenshots and detail are in the portfolio document that comes with this resume.

PROJECT 01 — TNS

Operational Performance & Energy Intelligence

Platform · 7 capabilities

TNS measures whether machines are actually working. OEE per machine and per shift, computed automatically instead of typed into a spreadsheet. Downtime detected and classified by cause. Production output tracked live. Energy metered per machine, including kWh per unit produced, which is the number that tells you whether a line is getting worse. A 3D floor twin and a mobile app sit on top of the same data.

Energy Monitoring

Energy Efficiency

Energy Mobile

OEE Monitoring

Downtime Monitoring

Production Monitoring

Digital Twin

PROJECT 02 — OPTIMUS

Predictive Maintenance & CMMS

Platform · 6 capabilities

OPTIMUS watches vibration, temperature and current on the assets a plant cannot afford to lose. When something drifts, it says so early, and the finding turns into a work order with a schedule, a checksheet and a spare part attached, not a note in someone's phone. Andon gives the shopfloor a one-tap way to raise a problem to the people who can fix it.

Condition Monitoring

Predictive Maintenance

Asset Health

CMMS

Maintenance Analytics

Digital Andon

Digital Twin

PROJECT 03 — TNS ENERGY MOBILE

Flutter app for Android & iOS

iOS 12+ · Android 8+

The energy dashboard lives on a control-room PC. The manager who can approve stopping the waste is out on the floor. This app puts today's consumption, its cost in rupiah, peak load against the contracted limit, and the open findings on their phone. Tap a number and you get the arithmetic, the baseline and the curve it came from. Findings inferred from power alone are marked MEDIUM confidence with the reason printed underneath, because the product cannot prove more than that. One permission: INTERNET.

PROJECT 04 — INDUSTRIAL IOT NODE

Data acquisition hardware & firmware

STM32 · KiCad

Plenty of machines on an Indonesian factory floor have no digital data point at all. The node is what we bolt on: an STM32-based acquisition board with dual high-speed encoder inputs, taken from schematic and PCB layout through BOM sourcing to commissioning on running equipment, plus accelerometer nodes for vibration and temperature. Without it the platforms above have nothing to read.

WHY THE APPLE DEVELOPER ACADEMY

Five years of making industrial data readable, and nearly all of it ended up on a desktop dashboard. My one mobile product reaches iOS through Flutter, which works, but means I have never really written for the platform. Swift, SwiftUI, the Human Interface Guidelines and the design side of it are the gap.

What I bring is a domain most applicants do not have: real plants, real sensors, and users who will stop using something the moment it wastes their time. I would like to build an Apple-platform product properly instead of approximating one.