

ADI HADITYA NURSYAM

SOFTWARE & AUTOMATION ENGINEER

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PROFESSIONAL SUMMARY

Software and automation engineer with an ITB Mechanical Engineering degree (GPA 3.90/4.00) and hands-on work across embedded control, browser HMIs, telemetry, industrial analysis, and production software. Builds complete systems from physical behavior and firmware through data, interfaces, and deployment.

TECHNICAL SKILLS

Automation: ESP32, embedded C/C++, PID, trajectory generation, telemetry, Web Serial, MQTT, industrial IoT, Python, MATLAB

Software: JavaScript, TypeScript, React, Next.js, Node.js, REST APIs, tRPC, PostgreSQL, SQLite/Turso

Engineering: SOLIDWORKS, ANSYS Workbench, FEA, mechanical design, maintenance analysis, experiment design

Cloud & Tools: Cloudflare Workers/D1/R2/Vectorize, Docker, GitHub Actions, Git, Gemini, RAG

ENGINEERING EXPERIENCE & PROJECTS

Two-DOF SCARA Robot - Final-Year Project | Institut Teknologi Bandung

2026

Bandung, Indonesia

- Built the mechanical, control, firmware, telemetry, HMI, and analysis stack for a planar two-joint teaching robot using DC and stepper actuation.
- Implemented ESP32 PID control, tracking differentiation, trapezoidal trajectories, and independently switchable inertia, Coriolis, and gravity compensation.
- Created a shared telemetry contract, Next.js/Web Serial HMI at 921,600 baud, and Python export tooling for five reproducible experiment families.

Mechanical Maintenance Intern | PLN Indonesia Power

Jun 2025 - Aug 2025

Banten / Suralaya Unit 8, Cilegon

- Investigated recurring BC-54 conveyor-idler failures using field inspections, measurements, operational data, 3D modeling, and ANSYS Workbench FEA at an 800 TPH condition.
- Found 68.77 MPa maximum von Mises stress and 1.74 minimum safety factor; identified wear plus fatigue as the likelier mechanism and proposed periodic ultrasonic thickness inspection.

IIoT Conveyor Interface

2025 - 2026

- Built a browser-based conveyor HMI integrating MQTT machine data, operator controls, diagnostics, and persisted application state.

SOFTWARE PRODUCT EXPERIENCE

Founder & Lead Full-Stack Engineer (CEO) | Zyx Academy (zyxacademy.com)

2024 - Present

Bandung, Indonesia

- Architected and implemented the core Next.js/TypeScript learning platform as primary engineer, serving 30+ learners with 100+ learning materials and retrieval-backed AI workflows.
- Owned frontend, backend, relational/vector data, Cloudflare infrastructure, product operations, and content-authoring systems.

Head of IT Development / Full-Stack Engineer | HMM ITB

Aug 2024 - May 2026

Bandung, Indonesia

- Independently built a deployed Next.js/tRPC/PostgreSQL learning and community platform with auth, storage, notifications, PWA capabilities, and tests.

EDUCATION & RECOGNITION

Bachelor of Engineering, Mechanical Engineering | Institut Teknologi Bandung

Aug 2022 - Jul 2026

- GPA 3.90/4.00 | Mechanical Engineering Outstanding Student 2022 (one of three departmental students).