MUHAMMAD AFNAN RISANDI

MECHATRONICS & ARTIFICIAL INTELLIGENCE STUDENT | AI RESEARCHER & IOT SYSTEMS

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SUMMARY

Mechatronics & Artificial Intelligence student with hands-on experience in Deep Learning research, IoT sensor fusion, and autonomous robotics. Proven ability to deliver integrated hardware-software solutions combining computer vision analysis, real-time embedded systems, and social-impact engineering. Led cross-functional teams in managing community-scale cultural projects. Seeking internship in AI Engineer, IoT Developer, or Robotics Systems.

EDUCATION

Universitas Pendidikan Indonesia   **2023 - Present**
- Bachelor of Engineering, Mechatronics and Artificial Intelligence GPA: 3.43/4.00

TECHNICAL SKILLS

Programming

Python · Java · C/C++ · JavaScript · TypeScript

AI / Machine Learning

TensorFlow · LLM,OpenAI-API · Audio Classification · Computer Vision · Model Deployment

IoT & Embedded Systems

Microcontroller · Arduino · ESP32 · WebSocket Streaming · Sensors & Actuators · MQTT · Firebase

Data & Tools

MySQL · PostgreSQL· Git/GitHub · Figma · VS Code · Google Collab

PROJECTS

Konsultansi Website Percetakan (Zona Printing) │ Full Stack Web Developer │   **2025**
Tech Stack: Tech Stack: Next.js, React, Data Visualization
- **Created** a high-performance digital catalog with masonry image layouts to showcase printing portfolios effectively.
- **Developed** an analytical dashboard allowing the client to visualize sales trends and business metrics for data-driven decision making.
- **Optimized** the ordering user flow (UX), reducing friction for potential customers and increasing conversion potential.

Grapara Customer Service │ Full Stack Developer │   **2024**
Tech Stack: Laravel, TiDB, WebSocket, Tailwind CSS
- **Developed** a secure queue management system featuring SQL Injection protection and strict input sanitization, ensuring patient data integrity.
- **Implemented** real-time updates using WebSockets/Polling to reduce queue uncertainty and improve user wait-time experience.
- **Designed** a responsive Glassmorphism UI, creating a modern and approachable interface for diverse user demographics.
- **Engineered** Role-Based Access Control (RBAC) to securely separate Admin and User functionalities.

Robot Line Follower Otonom | Robotics Engineer | 2025

Tech Stack: Arduino, C++, PID Control Algorithm, MQTT, Firebase

- **Programmed** a PID (Proportional-Integral-Derivative) control system to achieve high-speed, stable line tracking on complex paths.
- **Optimized** microcontroller cycle times for rapid sensor response, ensuring minimal deviation at high speeds.
- **Designed** adaptive speed control logic allowing the robot to automatically decelerate on sharp curves to prevent derailment.

Monitoring Kematangan Kompos | IoT & ML Engineer 2025

Tech Stack: IoT (ESP32/Arduino), Machine Learning (Regression), Expert Systems, Firebase

- **Integrated** DHT22 and Soil Moisture sensors to collect precise environmental data for organic decomposition analysis.
- **Deployed** a regression-based Machine Learning model to predict harvest timing based on real-time temperature and humidity trends.
- **Built** a live dashboard connected to Firebase for remote monitoring of compost status, improving farming efficiency.

Kid Curios: Aplikasi Belajar IPA | UI/UX Designer | 2025

Tech Stack: Figma, User Research, Experience Research, Prototyping

- **Designed** a child-centric user interface focusing on accessibility, large touch targets, and intuitive navigation for young learners.
- **Implemented** gamification mechanics (rewards, engagement loops) to increase retention and make learning science enjoyable.
- **Created** high-fidelity interactive prototypes to simulate the native app experience for user testing and validation.

ORGANIZATIONAL EXPERIENCES

BEM REMA UPI PURWAKARTA Director General of Digital & Technology 2025 - 2026

- **Centralized Information Ecosystem:** Architected and managed "SENTRA" (Sumber Ekspresi dan Informasi Umum), serving as the primary digital communication hub bridging university administration with the student body, ensuring rapid and accurate information dissemination.
- **Visual System Standardization & Workshop Design:** Developed comprehensive design systems, student-centered workshops, and infographic templates to standardize institutional communication, improving information clarity, visual literacy, and engagement for thousands of students.
- **Multimedia Strategy:** Directed the end-to-end multimedia production (videography, photography, editing) for high-stakes campus events, transforming raw documentation into cohesive digital narratives.

HIMATRONIKA-AI Head of Social & Political Departmen 2025 - 2026

- **Intellectual Agitation & Advocacy:** Orchestrated critical discussion forums designed to sharpen the dialectical thinking of engineering students, utilizing "Visual Propaganda" techniques to simplify complex sociopolitical issues into accessible, high-impact educational content.
- **Industrial & Academic Relations:** Initiated strategic external relations programs, including comparative studies to other universities and industrial excursions (e.g., PT Amerta Indah Otsuka/Pocari Sweat) to observe automation systems directly in the manufacturing line.
- **Team Leadership:** Led a specialized staff division in executing educational campaigns, fostering a culture of skepticism and critical analysis within the technical student community.

HIMATRONIKA-AI Staff of Communication & Information 2024 - 2025

- **Brand Establishment:** Produced foundational visual assets for the association, including official board photography and introductory profile videos, establishing a professional organizational image.
- **Event Documentation:** Served as the primary visual archivist for departmental activities, ensuring key moments were captured for historical records and public relations.