DIKY MULYA ATMAJA

IoT Engineer

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PROFESSIONAL SUMMARY

Final-year Engineering student specializing in the integration of software logic, hardware systems, and artificial intelligence. Experienced in building end-to-end IoT and AI solutions—from assembling ESP32-based hardware and developing backend systems with Flask/Firebase to deploying YOLOv8 computer vision models. Passionate about creating scalable, intelligent systems that drive Smart City innovation and automation. Dedicated to bridging the gap between embedded systems and cloud-based intelligence for real-world impact.

TECHNICAL SKILLS

- **Hardware & Embedded:** ESP32, Arduino, Raspberry Pi, Sensors Integration (DHT, Ultrasonic, etc), C++
- **Mobile & Web:** Flutter, Dart, React, Next.js, Python Flask, HTML, CSS
- **AI & Data:** Python, YOLOv8 (Computer Vision), TensorFlow Lite, OpenCV
- **Cloud & Database:** Google Firebase (Auth, Firestore, Stream), MySQL, REST API, MQTT
- **Tools:** Git, GitHub, VS Code, PlatformIO

KEY PROJECTS

RoadGuard: AI-Assisted Road Maintenance Platform

- Engineered an end-to-end complaint management system integrating YOLOv8 Deep Learning models with a Python Flask backend to automatically detect and classify road damages from user-uploaded images.
- Built a geospatial dashboard using Leaflet JS to visualize damage clusters, enabling government agencies to prioritize repairs based on AI-verified severity data.
- Reduced manual verification time by automating classification, bridging citizen reporting with actionable maintenance workflows.

SecureHome: Distributed IoT Access System

- Architected a distributed security ecosystem using multi-node ESP32 architecture, separating Front Gate (RFID) and Main Door (Keypad/Solenoid) logic for enhanced reliability.
- Developed a centralized Python Flask server to log entry attempts and synchronize hardware states (servo/relay) with a real-time web dashboard.
- Implemented proactive security features, including an Intruder Lockout mechanism that freezes the system after repeated failed PIN attempts to prevent brute-force attacks.

IoT Learn: Cloud-Based Education Platform

- Developed a comprehensive Learning Management System (LMS) using Python Flask and Firebase Admin SDK, featuring a custom CMS for mobile content management.
- Implemented hybrid authentication to verify client-side tokens on the server, ensuring secure access to premium content and administrative features.
- Designed a Role-Based Access Control (RBAC) system and NoSQL search engine to efficiently manage user queries and course materials.

SIPILAH: Smart Irrigation System

- Built a 4-channel irrigation controller based on ESP32 with two-way synchronization via Firebase Realtime Database, ensuring instant state updates between physical switches and the mobile app.
- Solved field connectivity issues by implementing BLE Provisioning, allowing farmers to configure Wi-Fi credentials wirelessly via Bluetooth and store them in NVS memory.
- Developed a companion mobile app using Flutter, featuring GPS-based attendance for field workers and real-time irrigation control.

EDUCATION

Universitas Amikom Yogyakarta

Bachelor’s Degree in Computer Engineering (Expected Graduation: 2027)

Focus: Internet of Things (IoT), Artificial Intelligence, and Fullstack Development