

— PORTFOLIO · EMBEDDED & IOT

Dhimas Ardinata

Putra Pamungkas

Process Engineering Support Technician · Wiwynn |
Embedded & IoT

Process engineering at Wiwynn, backed by hands-on embedded firmware and IoT development.

Telecommunications Engineering · Senai, Johor, Malaysia

● OPEN TO COLLABORATION AND TECHNICAL DISCUSSIONS

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— AT A GLANCE

From device pins to dependable data

My experience spans embedded firmware, device integration, validation, and field troubleshooting—from sensor acquisition through connectivity.

7

MONTHS OF IOT IMPLEMENTATION
EXPERIENCE

3.80

TELECOMMUNICATIONS ENGINEERING GPA

845

TOEIC LISTENING & READING

Three essentials for deployable IoT systems

01

Structured firmware

C/C++ for sensor acquisition, state handling, actuators, settings, watchdogs, and OTA.

02

Communication integration

RS485/Modbus RTU, UART, I²C, Wi-Fi, GPRS/LTE, REST.

03

Field validation

Checking wiring, sensors, power, modems, connectivity, and data flow.



FINAL PROJECT • VON FLORIST (KENDAL, CENTRAL JAVA, INDONESIA) • 2025-2026

ATOMIC: Orchid Greenhouse Monitoring & Control

Team final project. My scope: node/gateway firmware, actuator control, caching, and validation.

- 10 ESP8266 sensor nodes + 2 ESP32 gateway/controllers
- Temperature, humidity, light; blower, exhaust fan, dehumidifier control
- Local cache, gateway logging, WebSocket diagnostics, OTA

BEFORE CACHING • ~51-53% PACKETS LOST



AFTER CACHING • ~12-19% PACKETS LOST



• DELIVERED • ○ LOST • EACH DOT = 5% OF PACKETS • 10 NODES • 25 FEB-31 MAR 2026

GATEWAY PANEL • GREENHOUSE





OMAH-IOT INTERNSHIP · SALATIGA, CENTRAL JAVA, INDONESIA
· 2025

MONIK: Hydroponic Monitoring & Control

- ATmega328P monitoring unit: pH, EC/TDS, water & air temperature, light, nutrient level
- Telemetry via ESP8266 to monitoring dashboard
- ESP32 control for nutrient A/B and pH-down pumps: thresholds, fail-safes, watchdog, OTA

MONIKPLUS · MONITORING UNIT



OMAH IOT INTERNSHIP · 2025

MOSIBAN: Rainfall Monitoring Device

- ESP32/TTGO T-Call for sedimentation and flood monitoring
- Tipping-bucket rainfall telemetry via HTTP/JSON
- SIM800/GPRS · DS3231 RTC · Bluetooth diagnostics · OTA

BLUETOOTH SERIAL · MOSIBAN

```
Menghubungkan ke GPRS... Terhubung.  
Menyinkronkan waktu RTC...  
RTC disetel ke: 2025-07-16 14:38:09  
--- SETUP SELESAI. MENUNGGU HUJAN... ---  
>> TIP TERDETEKSI! Total tips saat ini: 3  
-----  
Hujan pertama terdeteksi! Memulai timer  
cooldown 10 detik...  
>> TIP TERDETEKSI! Total tips saat ini: 5  
>> TIP TERDETEKSI! Total tips saat ini: 8  
>> TIP TERDETEKSI! Total tips saat ini: 9  
>> TIP TERDETEKSI! Total tips saat ini: 13  
>> TIP TERDETEKSI! Total tips saat ini: 14  
Waktu cooldown selesai. Mengirim data. Total  
Tips: 14 (2.80 mm)
```

BLUETOOTH SERIAL DIAGNOSTICS SESSION: GPRS LOG,
RTC SYNC, TIP COUNT



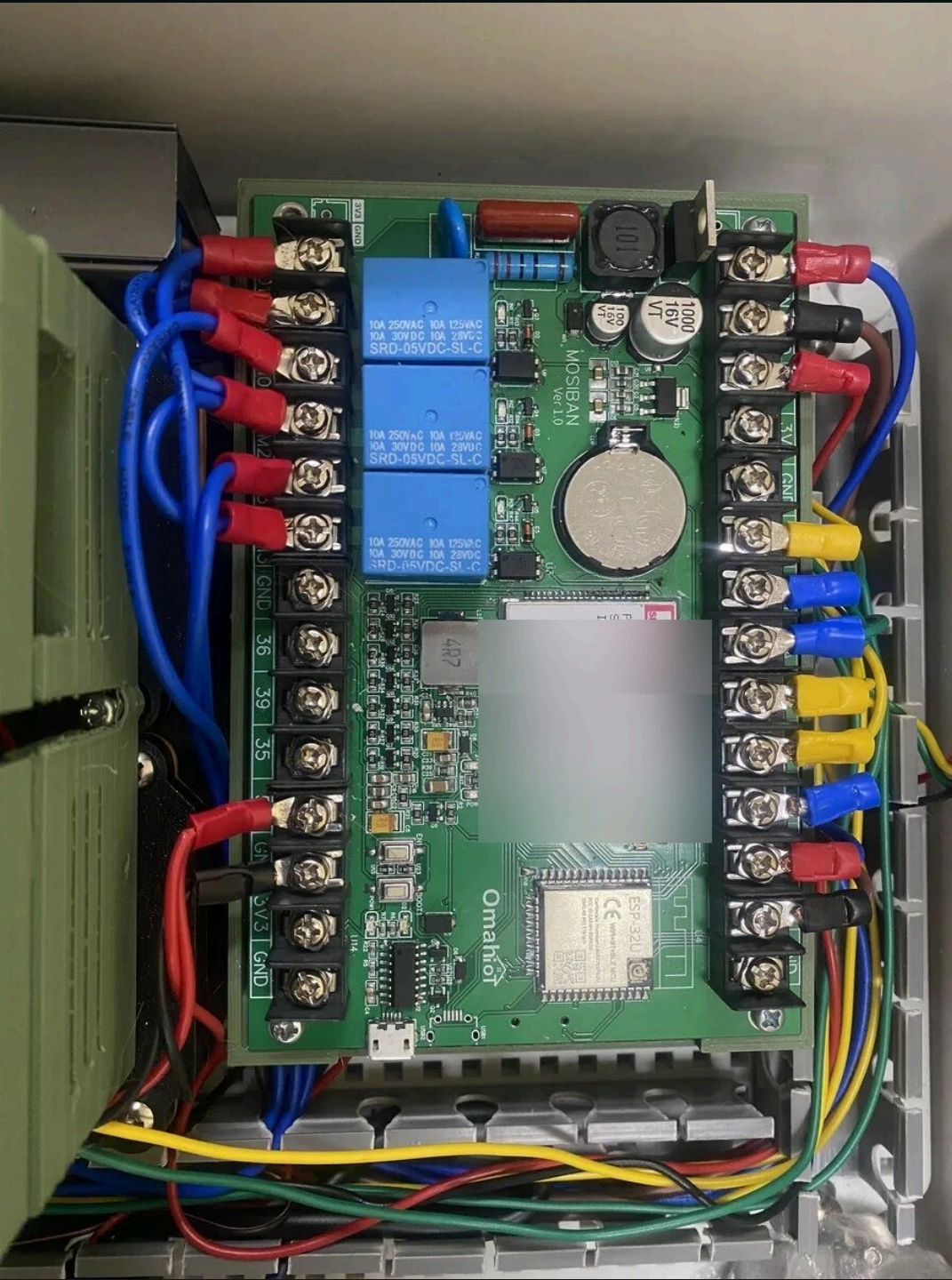
POLITEKNIK NEGERI SEMARANG * OMAHIOT RESEARCH • 2026

IMONIK: Intelligent Industrial Hydroponics

Lecturer-led research. My scope: firmware and device-validation support.

- ESP32 firmware: RS485/Modbus RTU, UART/I²C, display/RTC, water-level sensing, SIM7600 modem, pumps
- RS485 test firmware for wiring verification and communication diagnosis
- Persistent configuration, fault handling, OTA-oriented maintenance

OMAHOT CONTROLLER BOARD USED
ACROSS PROJECTS, WIRED FOR THE
IMONIK PUMP AND RS485 SETUP



VALIDATION

Hardware validation, not just firmware

- 19 sensor nodes from Sumowono, Central Java, Indonesia: QC with per-sensor failure reports
- Per-node calibration: checked against handheld reference meters
- 11 Raspberry Pi lab units: hardware QA with per-unit failure reports
- Found and fixed a reversed pump on site that had driven nutrient pH down to 2.5
- Method (from IMONIK): Pinout → Wiring → Modbus scan → Diagnose

Panduan Penggunaan Sistem

Raspberry Pi

22 Modul Pembelajaran Berurutan

Lakukan setiap modul secara berurutan agar sistem dapat bekerja dengan kemampuan terbaiknya. Setiap modul adalah bekal untuk memahami modul berikutnya.

01  Persiapan Awal Sistem

Dasar 

02  Dasar Interaksi Berbasis Teks

Dasar 

03  Mengatur File & Izin Akses

Dasar 

04  Pengaturan Jaringan Tetap

Dasar 



ALPRO II • JUL-DEC 2025

Raspberry Pi Modules: 22 Guided Lessons

- 22 Indonesian modules + progress tracking for course use
- Foundation: OS, terminal, Python, GPIO, sensors, I²C/UART, Blynk
- Advanced: MQTT/Mosquitto, MariaDB, multi-Pi, hardening, Flask
- QA of 11 lab units with per-sensor failure reports

LEARNING MODULES WEBSITE

 EXPERTISE

Backed by real implementation work

FIRMWARE

C/C++, Arduino, PlatformIO, state machines, watchdog, OTA, FreeRTOS, Zephyr exposure (nRF Connect SDK)

PLATFORMS

ESP32/ESP32-S3, ESP8266, TTGO T-Call, ATmega328P, cellular modems

INTERFACES & NETWORKING

RS485, Modbus RTU, UART, I²C, SPI, Wi-Fi, GPRS/LTE, MQTT, REST

VALIDATION & TOOLS

Git/GitHub, serial monitoring, multimeter, Linux/SSH, CMake, Python, documentation

Open source: two fixes merged in Arduino-ESP32 Core v3.3.9 ([#12613](#), [#12615](#)) · [EAWS v0.5.1](#) on PlatformIO.

— EXPERIENCE & CREDENTIALS

Experience & credentials



Process Engineering Support Technician: Wiwynn (Oct 2026 - Present · Senai, Johor, Malaysia)

Process support for hyperscale cloud/AI server lines (L6 PCBA): SMT/DIP fixture setup and ICT/MDA, BST, and BFT operations.



Hardware Development Intern: OmahIoT (Jan-Jul 2025 · Semarang, Central Java, Indonesia)

Site survey through deployment, programming ESP32/ESP8266/TTGO/ATmega328P devices, troubleshooting power, wiring, sensors, and data communication.



Linux Essentials · C++ Essentials 1 · CCNA: Switching, Routing and Wireless Essentials · Cisco Networking Academy



SCE Automation Fundamentals (PLC) · Siemens



nRF Connect SDK Fundamentals · Nordic



Hardware Components and Troubleshooting · IT Fundamentals · IBM SkillsBuild



Six Sigma White Belt · CSSC



TOEIC Listening & Reading · 845/990

— CLOSING

Let's discuss technical projects

Firmware/IoT projects, device integration, hardware validation.

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SCAN PORTFOLIO