Rijal Dzaki Fadhlurrohman

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I am a Physics Engineering graduate with a strong interest in technology development in the fields of instrumentation and control, automation, and the Internet of Things (IoT). I am actively involved in research projects focusing on the development of IoT-based systems, particularly in embedded systems.

EDUCATION

Universitas Gadjah Mada - Yogyakarta, Indonesia Aug 2021 – Aug 2025

Bachelor of Engineering in Physics Engineering (GPA: 3,19/4,00)

Undergraduate Thesis Work: "Design and Construction of an Energy Consumption Management System for Internet of Things (IoT)-Based Automated Recording Device (ARD)"

Activity:

- UI/UX Designer & Front-End Developer for the "Sleman Sembada" Instrumentation System Labwork Final Project.
- Designed an automatic baking system with a PLC-based control architecture connected to photoelectric and thermocouple sensors via Ethernet TCP/IP, utilizing the OPC-UA protocol for HMI communication.
- Developed a stress detection system using a Galvanic Skin Response (GSR) sensor and LoRa communication protocol for the Communication Network project.
- Designed a flood detection system using machine learning-based soft sensors integrated with ultrasonic, LiDAR, and accelerometer data.
- Designed an IoT-based indoor air quality monitoring system using NodeMCU ESP32, gas and temperature sensors, integrated with the Blynk Dashboard for real-time monitoring.

WORK EXPERIENCE

PLN Indonesia Power - Cilacap, Central Java, Indonesia Jan 2024 – Feb 2024

Instrumentation Engineer Intern

- Completed a 1-month Practical Work with a topic focused on Review and Preventive Maintenance of Instrumentation Equipment in Coal Feeder System.
- Directly involved in inspection and preventive maintenance of instrumentation systems, particularly on the coal feeder system, in collaboration with the instrumentation technician team.
- Conducted calibration of coal feeder sensors to ensure the reliability and accuracy of fuel delivery to the furnace.
- Studied the working principles of power plants, particularly steam power plants, including process flow, instrumentation, piping, and instrumentation diagram (P&ID).

ORGANIZATION EXPERIENCE

Nuclear & Engineering Student Associations UGM (KMTNTF UGM)

Head of Arts and Sports Division Nov 2023 – Nov 2024

- Led arts and sports programs including competitions, training, and internal-external events.
- Managed division budget and coordinated teamwork to ensure program success.

Staff of Arts and Sports Division Nov 2022 – Nov 2023

- Organized regular training and managed teams during competitions.

Negarakertagama UGM

Staff of Talent and Interest Division Oct 2021 – Jul 2022

- Supported execution of talent and interest programs including workshops and competitions.

VOLUNTEER WORK

KKN-PPM UGM Pijar Pejawaran – *Team Coordinator* Feb 2024 – Sep 2024

- Led the planning, coordination, and execution of multidisciplinary work programs during the community service project.
- Managed task distribution, maintained effective internal communication, and acted as a liaison between the local community, supervisors, and the university.

Pionir Kesatria FT UGM – *Logistic and Equipment Staff* May 2023 – Aug 2023

- Managed logistics and catering to ensure smooth program execution.
- Coordinated with committees for facility readiness and material distribution.

Parade Eureka KMTNTF UGM 2023 – *Chief Exevutive* Jan 2023 – Feb 2023

- Led event planning, budgeting, and coordination with multiple teams.
- Ensured effective communication and successful event execution.

Dinamika DTNTF – *Evaluator Staff* Sep 2022 – Mar 2023

- Developed activity rules and ensured participant discipline.
- Monitored and evaluated the progress of new student orientation.

Revolution of Energy – *Competition Staff* Sep 2022 – Nov 2022

- Prepared technical guidelines and coordinated with judges.
- Moderated competition sessions to ensure smooth event flow.

Negarakertagama Bercerita – *Logistic and Equipment Staff* Jan 2022 – Feb 2022

- Handled logistics and facility setup for event activities.
- Ensured timely availability of equipment and materials.

PROJECT

Energy Consumption Management System for IoT-Based Automated Recording Device (KATALIS 2024: Konsorsium Nyanyian Alam)

Developed an automated power management system using Wemos D1 Mini, relay modules, and MQTT communication to optimize energy usage in IoT-based Automated Recording Device.

IoT-Based Ecoenzyme Irrigation Automation System (UGM Appropriate Technology Community Service)

Designed an IoT-based irrigation automation system using ESP32 and RTC modules with an Access Point web server and solar power integration for sustainable agriculture. The system enables time-based irrigation scheduling and operates independently of internet connectivity.

SKILL

Languages	**:**	Bahasa Indonesia (native), English (proficient)
Technical Skills	**:**	Automation, Embedded Systems, IoT Development, Communication Protocols, Python, C/C++, PCB Design, Arduino, CODESYS, Proteus, EasyEDA, AutoCAD, Figma, Microsoft Office