

# IQBAL ALIANDRA PUTRA

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An Engineering Physics graduate from Gadjah Mada University, specializing in instrumentation, control systems, and automation design. With a strong academic foundation and practical experience in industrial projects, he developed expertise in various technologies. Proficient in PLC, SCADA, and process simulation, with experience in Front End Engineering Design (FEED), system commissioning, and software applications for measurement systems. Committed to delivering high-quality solutions for energy and industrial projects.

## EDUCATION

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**Bachelor of Engineering** – Universitas Gadjah Mada

Sep 2020 – Apr 2024

Major: Engineering Physics

GPA: 3.57/4.00 (Cum Laude)

- Thesis: Performance Analysis of S7-1500 PLC Integration with MQTT-Based Android Mobile Device.
- Key Skills: Instrumentation, Control Systems, Automation System Design
- Activities: Labwork Assistant, Student Energy Council Member, Society of Petroleum Engineers (SPE).

## WORKING EXPERIENCE

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**PT Wahana Adireksa Pratama**

Jakarta, Indonesia

Service Engineer (Fire & Gas)

Nov 2024 – Present

- Perform repair, calibration, testing, and commissioning of fixed and portable Fire & Gas (F&G) systems, including Factory Acceptance Test (FAT), Site Acceptance Test (SAT) and system installations.
- Conduct surveys, design F&G solutions, and provide training to customers and internal teams.
- Deliver reports, issue calibration certificates, and offer recommendations based on system evaluations.
- Ensure safety, quality, and environmental compliance through risk assessments, JSA, and program support.

**PT PLN Mandau Cipta Tenaga Nusantara**

Duri, Indonesia

Instrument and Control Engineer

Jun 2024 – Aug 2024

- Managed and executed control system upgrades, including critical components such as the Heat Recovery Steam Generator and Fire Alarm Control Panels.
- Conducted project preparations, testing, and supervised safety module commissioning.
- Designed testing schedules, and supervised contractor coordination to ensure technical compliance and safety standards.

**Pusat Kajian LKFT Universitas Gadjah Mada**

Yogyakarta, Indonesia

Junior Researcher

Sep 2023 – Feb 2024

- Collaborated in the design and execution of experimental studies and surveys, ensuring methodological rigor and alignment with research objectives.
- Conducted comprehensive data analysis using software tools, providing insights to research findings.
- Authored research reports and drafted scientific articles, contributing to the dissemination of research outcomes and peer-reviewed publications.

**PT Kilang Pertamina Internasional RU VI**

Balongan, Indonesia

Electrical and Instrument Engineer Intern

Dec 2022 – Feb 2023

- Conducted Safety Instrumented System (SIS) analysis related to the Debutanizer Reboiler Heater Shutdown in the CCR Platforming Process Unit.
- Designed Safety PLC logic for SIS applications, enhancing system reliability and safety measures.
- Simulated Triconex by Schneider Electric to implement and test Safety PLC logic for the Debutanizer Reboiler Heater shutdown scenario.

**Universitas Gadjah Mada**

Yogyakarta, Indonesia

Laboratory Assistant

Jan 2022 – Dec 2023

- Supported laboratory courses in Communication Networks, Digital Electronics, Measurement Systems, Basic Informatics, and Computer Programming.
- Led hands-on experiments, assisting in data analysis, system integration, and implementation of microcontroller-based projects (Arduino, ESP8266, ESP32, Raspberry Pi).
- Provided guidance in programming (Python, C) for automation and data processing tasks.

## ORGANIZATION EXPERIENCE

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### Dewan Energi Mahasiswa UGM

Yogyakarta, Indonesia

Secretary

Jan 2022 – Feb 2023

- Managed the storage and allocation of data from all directorates. ‘
- Oversaw the filing of physical and digital inventories for Dewan Energi Mahasiswa.
- Handled the process of making and collecting data for all forms of correspondence.

### Nuclear & Engineering Physics Student Association

Yogyakarta, Indonesia

Human Resources Development Bureau – Head & Staff | Project Officer

Nov 2021 – Oct 2023

- Led a team of 10 members, managing over 9 strategic programs focused on HR development.
- Organized 9 webinars for 95+ participants and handled recruitment, onboarding, and team regeneration.
- Monitored and provided actionable recommendations to optimize HR processes and team performance.

## VOLUNTEER WORK

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### Community Service Program (KKN-PPM) UGM

Jul 2023 – Aug 2023

Student Volunteer

Held a community service for 50 days in Sumberan Village, Yogyakarta. Led initiatives in public health promotion, sustainable tourism development, and cultural preservation. Developed health education materials, created a tourism website, and conducted training sessions for local residents

## CERTIFICATIONS

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### BASIC SEA SURVIVAL – PT Safety Training Solusindo

Feb 2025 – Feb 2028

### SISTEM IZIN KERJA AMAN (SIKA) – Pertamina Hulu Energi OSES

Feb 2025 – Feb 2028

### TOEFL ITP – Score: 513/677

Sep 2024

Credential: [TOEFL ITP Score Report](#)

### Programming PLC & HMI Mitsubishi FX Series - Anak Teknik Indonesia

May 2024

Credential: [Certificate](#)

## PROJECT

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### Greenway Project – Wood White Pellet Plant – PT Malinau Hijau Lestari

Feb 2025

Implemented F&G system with Kidde MLX panels, explosion-proof detection, and SCADA integration. Enhanced safety via addressable modules and RS232-to-FO Modbus communication.

### Pipanisasi Pengapton Boyolali - Pertamina Patra Niaga

Jan 2025

F&G system with two Kidde MLX panels with addressable modules and modbus communication and Fire detection System using Fgard Flame Detector.

### Gas Detector System for BM1 and Stock Preparation - PT Indah Kiat Pulp & Paper

Jan 2025

Configured 3 SIL 2 Crowcon Multiscan++ S2 panels for 25 IRmax detectors. Implemented Modbus TCP/IP for seamless data transfer, enhancing overall safety and efficiency in a critical industrial environment.

### Edge System Design for Integration of S7-1500 PLC Communication

Jan 2024

Developed an edge system that integrates Siemens S7-1500 PLC with mobile devices using OPC-UA and MQTT protocols. The project included analysis to measure latency, with correlation results of local and cloud.

### Water Injection Pump System Design Project

Nov 2023

Developed the P&ID, Instrument Index, Instrument I/O List, Instrument Loop Diagrams, Instrument Process Datasheet and Cable Block Diagram. Performed calculation for sizing control valve and orifice.

## SKILL & INTEREST

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**Skills** : Control Systems, Field Instrumentation, FEED, DED, Communication Protocols, Programming and Simulation, Project Management, SCADA Design, Machine Learning.

**Languages** : Bahasa Indonesian (Native), English (Intermediate).

**Interest** : Instrumentation, Industrial Automation, Internet of Things, Renewable Energy & Sustainability, Robotics, Artificial Intelligence, Sustainable Engineering Practices, Advanced Process Control.