

# YUSRON IZZA FARADISA

East Jakarta, Republic of Indonesia

☎ (+62) 82323858260 | ✉ yusronizzafaradisa@gmail.com | 📄 yusronizza | 🌐 yusronizza | 🏠 yusronizza.com

## INTRODUCTION

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Embedded systems and IoT engineer with hands-on experience in microcontroller, IoT, API integration, Cloud Service, and embedded software development on Raspberry PI and STM32. Skilled in optimizing resource-constrained systems and collaborating on cross-functional hardware–software projects. Seeking to leverage technical expertise to build high-performance, scalable embedded, and IoT solutions.

## EDUCATION

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**Ehime University** Oct. 2024 – Nov. 2024  
*Short-Term Exchange Program* Matsuyama, Japan

- Conducted research on Large Language Model (LLM)–based lie detection, using Statement Accuracy Prediction (SAPLMA) and Training of Truth and Polarity Direction (TTPD).
- Participated in Japanese language and culture immersion activities, enhancing cross-cultural communication skills.

**Universitas Gadjah Mada** Sep. 2020 – Oct. 2024  
*Bachelor Degree in Electrical Engineering* Yogyakarta, Indonesia

- Silver Medal, 35th National Student Scientific Week (PIMNAS), Ministry of Education (2022).
- Hands-on internships as FPGA Engineer and Instrument & Control System Engineer.
- Active member, Electrical Engineering & Information Technology Student Association; organized department-wide engineering events.

## PROFESSIONAL EXPERIENCE

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**Embedded Engineer** May. 2025 – Present  
*PT Nusapala Berkah Autonomus* West Jakarta, Indonesia

- Collaborated with cross-functional teams to prototype and optimize hardware–software interfaces, improving system stability and response time.
- Developed firmware libraries for the ACR122U NFC reader from Python to Go language, enabling seamless integration.
- Designed and integrated a payment gateway for IoT-based embedded devices, enabling real-time, secure transactions between hardware and cloud services.
- Contributed to firmware testing and continuous integration pipelines, ensuring code quality and maintainability.

**Online Robotics Teaching Tutor (Part-time)** Sep. 2022 – Present  
*Jago Robotika* Yogyakarta, Indonesia

- Led robotics classes for elementary students at prestigious schools, including Lukman Hakim International and Teladan, introducing fundamentals of electronics and programming.
- Designed, assembled, and soldered custom electronic teaching kits; performed troubleshooting to maintain reliable classroom demonstrations.
- Guided students through hands-on projects, fostering early STEM interest and practical problem-solving skills.

**Embedded Programmer** Jan. 2025 – May. 2025  
*Abarobotics* Semarang, Indonesia

- Developed firmware libraries for TM200 and CTI809 devices in Go language, enabling seamless integration with embedded control systems on Raspberry PI Platform.

- Optimized binary program size by 80%, improving memory efficiency and execution speed on resource-constrained hardware.
- Automated remote-device tasks using Bash scripting, streamlining deployment and maintenance.
- Designed and developed embedded systems using C and Go on microcontrollers and Raspberry Pi platforms.

### **FPGA Engineer (Internship)**

Feb. 2024 – Jun. 2024

*PT Len Industri (Persero)*

*Bandung, Indonesia*

- Developed and tested Amplitude Modulation (AM) on an Embedded Linux platform using C.
- Implemented digital modulation schemes, Binary Phase Shift Keying (BPSK) and Quadrature Phase Shift Keying (QPSK) using Verilog HDL.
- Integrated custom IP cores and HDL reference designs for the AD9364 radio-frequency transceiver.
- Established high-speed communication between FPGA and ARM processors via Block RAM and the AXI4-Lite protocol.
- Built a Python/Tkinter GUI to configure radio-frequency chip parameters, enabling quick lab testing.

### **Instrument and Control System Engineer (Internship)**

Jan. 2024 – Feb. 2024

*PT Nusa Halmahera Minerals*

*Maluku, Indonesi*

- Developed a PID calculator GUI using Python and Tkinter, allowing engineers to quickly tune control-loop parameters for on-site process systems.
- Analyzed process-control data to identify performance trends and recommend tuning adjustments for improved system stability.
- Documented system configurations and test procedures, streamlining future maintenance and audits.
- Performed maintenance, calibration, and troubleshooting of industrial sensors and actuators, ensuring accurate measurements and reliable plant operations.
- Configured and calibrated industrial sensors and actuators to ensure accurate real-time measurements in mining operations.

### **Digital Signal Processing Lab Work Assistant**

Oct. 2023 – Dec. 2023

*Universitas Gadjah Mada*

*Yogyakarta, Indonesia*

- Led three laboratory sessions covering: Frequency Spectrum Analysis and Filter Implementation using Python, Finite Impulse Response (FIR) Design and Windowing using Python, Digital-to-Analog (DAC) and Analog-to-Digital (ADC) Conversion on the STM32 Nucleo-F446RE development board
- Implemented Fast Fourier Transform (FFT) algorithms to convert signals from the time domain to the frequency domain.
- Designed and tested digital filters including low-pass, high-pass, band-pass, and band-stop.
- Applied windowing techniques such as Triangular, Hann, Hamming, and Blackman to improve spectral analysis.

### **Basic Electronics Lab Work Assistant**

Oct. 2023 – Dec. 2023

*Universitas Gadjah Mada*

*Yogyakarta, Indonesia*

- Led laboratory sessions on Instrumentation Amplifiers, AC–DC Converter Regulators, and Phase-Shift Oscillators, guiding students through circuit design and analysis.
- Built and demonstrated a full-bridge wave rectifier with an LM317 voltage regulator to provide a stable voltage source for experimental circuits.
- Utilized NI ELVIS II workstations to prototype and test a variety of analog and digital electronic circuits.
- Implemented NI LabVIEW interfaces for automated data acquisition using digital multimeters and oscilloscopes.

### **Telecommunication Lab Work Assistant**

Oct. 2023 – Dec. 2023

*Universitas Gadjah Mada*

*Yogyakarta, Indonesia*

- Led laboratory sessions on asynchronous serial communication, digital modulation, and digital communication for undergraduate students.

- Conducted experiments in analog and digital modulation, including amplitude modulation (AM) and binary phase-shift keying (BPSK), and guided students through setup, measurement, and analysis.

### Differential Equation Lecture Teaching Assistant

Feb. 2022 – Jun. 2022

*Universitas Gadjah Mada*

*Yogyakarta, Indonesia*

- Assisted in instruction for an undergraduate Differential Equations course, supporting lectures and grading assignments.
- Led weekly study sessions for a group of 8–10 students, reinforcing key concepts and guiding problem-solving techniques.
- Provided one-on-one tutoring to help students improve analytical skills and succeed in assessments.

## PROJECTS

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### RISC-V 32I Base Integer Microprocessor

2024

*Personal Project*

- Designed and implemented a 32-bit RISC-V processor in Verilog, providing both single-cycle and pipelined architectures.
- Extended the ISA with M (Multiply/Divide) instruction set extensions to enhance functionality and performance.
- Verified functionality through simulation and testbench development, ensuring compliance with the RISC-V specification.

## SKILLS

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- **Languages:** Indonesian (native), English (business), Japanese (N5)
- **Programming:** Python, Go, C, Verilog, MATLAB
- **Tools:** Vivado, Vitis, STM32CubeIDE, Git, VSCode
- **Frameworks:** Wails, Next.js, TailwindCSS
- **Libraries:** NumPy, Pandas, TensorFlow, Matplotlib

## CERTIFICATIONS

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- Verilog HDL Advanced – Intel (2024)
- DeepLearning.AI TensorFlow Developer – Coursera (2023)
- Mathematics for Machine Learning – Coursera (2023)

## AWARDS

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- JASSO Short-Term Scholarship at Ehime University 2024 – Awarded a scholarship for academic excellence and participation in the Short-Term Exchange Program.
- KATETIGAMA Scholarship Awardee 2023 – Scholarship granted for good academic performance and extracurricular contributions.
- 2nd Place, National Higher Student Competition (PIMNAS 35) 2022 – Ministry of Education, Rep. of Indonesia – Recognized for outstanding research and innovation in a national higher-education competition.
- Finalist, National Essay Competition 2022 – Semarang State University, Indonesia.
- Karya Salemba Empat Scholarship Awardee 2022 – Karya Salemba Empat Foundation.
- Best Paper at National Essay Competition LEON 2020 – Faculty of Social and Political Sciences Research Board, Brawijaya University, Indonesia

## VOLUNTEERING

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### **Community Service Leader – KKN-PPM UGM**

2023

*Universitas Gadjah Mada*

*Yogyakarta, Indonesia*

- Led a multidisciplinary student team to deliver community development programs, coordinating local partnerships and implementing technology-driven solutions.

### **Staff of Public Relation - PKM Center UGM**

2023

*Universitas Gadjah Mada*

*Yogyakarta, Indonesia*

- Supported communication efforts and public outreach for the Student Creativity Program (PKM) Center, helping to promote events and increase student engagement with university-wide initiatives.
- Acted as a primary point of contact for student inquiries, providing key information and guidance on program regulations, deadlines, and events.
- Facilitated communication between students and program coordinators, ensuring a smooth flow of information and a positive experience for all participants.

### **Coordinator of Robotics Division Technocorner**

2022

*Universitas Gadjah Mada*

*Yogyakarta, Indonesia*

- Directed the robotics competition division of a national technology event, organizing participant registration, technical requirements, and event operations.

### **Staff of Resource Management of Karya Salemba Empat Association UGM**

2022

*Universitas Gadjah Mada*

*Yogyakarta, Indonesia*

- Oversaw the resource management for the association, maintaining a precise inventory of materials and optimizing their use to support various internal community initiatives and events.

### **Coordinator – Festival Gadjah Mada IT Division**

2022

*Universitas Gadjah Mada*

*Yogyakarta, Indonesia*

- Oversaw the planning and execution of IT operations for a large-scale university festival, managing technical logistics and on-site support.

### **Staff of Robotics Division**

2021

*Universitas Gadjah Mada*

*Yogyakarta, Indonesia*

- Made a technical requirements and event operations of transporter sub-event robotics competition.