# **NAUFAL FIRDAUS | Artificial Intelligence Enthusiast**

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#### PROFESSIONAL SUMMARY

AI and Machine Learning specialist currently pursuing a Master of Computer Science, with a strong foundation in Electrical Engineering and a proven track record in developing and optimizing embedded systems. Eager to leverage expertise in Python, C++, and developing AI models to solve complex problems in roles like AI Engineer or Machine Learning Engineer. Experienced in the full project lifecycle, from hardware integration on STM32/ESP32 platforms to developing AI-driven solutions.

#### **EDUCATION**

# • Master's of Computer Science | Universitas Esa Unggul | Sept 2024 – Present

- o Major in Artificial Intelligence (GPA 3,9/4,00)
- Publish 2 journals related to Artificial Intelligence (On Going)
- Bachelor's of Electrical Engineering | UPN Veteran Jakarta | Aug 2020 Feb 2024
  - o Major in Electronics and Control Systems (GPA 3,85/4,00)
  - o Active on KSM Internet of Things as a Chairman and KSM Mekatronik as Department Head
  - Outstanding Student 2023

## **WORK EXPERIENCES**

# • Firmware Engineer | PT. Tata Sarana Mandiri | Oct 2024 – Present

- Designed and optimized firmware for embedded and IoT devices (STM32, ESP32, Orange Pi), improving system performance and reducing latency by 20%.
- Developed and maintained automated firmware testing protocols, reducing product defects by 15% and accelerating release cycles.
- Implemented secure boot and encrypted OTA update mechanisms, increasing device security by 50% against unauthorized firmware modifications.
- Spearheaded the development of communication protocols for IoT devices, improving data transmission efficiency and reducing network congestion by 30%.
- Created comprehensive Git-based documentation for firmware integration workflows, enhancing team collaboration and knowledge transfer.

## • Robotic Event Manager | PT. Taman Teknologi Nusantara | Jun – Sept 2024

- Managed and executed national and international robotics events, ensuring 100% on-time delivery and adherence to technical specifications.
- Designed, assembled, and programmed competition-grade robots, integrating AI-based control systems to enhance autonomy and task accuracy.
- Coordinated cross-functional teams of engineers, designers, and trainers, resulting in improved operational efficiency and successful competition outcomes.
- Delivered hands-on training sessions on robotics, IoT integration, and basic AI applications, boosting participant technical competency by 40%.

## • Laboratory Assistant (AI & Embedded Systems Focus) | UPN Veteran Jakarta | Sept 2021 – Dec 2023

- Taught microcontroller and microprocessor programming (ESP32, Arduino, ESP8266) in C++ and Python, guiding students through IoT-based automation projects such as AI-assisted plant irrigation, environmental monitoring, and sensor integration.
- Delivered hands-on training in data algorithms and programming, covering Python for data processing and C++ for embedded applications foundational skills for AI model deployment on edge devices.
- Led PLC automation labs using Outseal PLCs and ladder logic, introducing students to industrial automation workflows applicable to AI-driven control systems.
- Provided instruction on digital logic design (logic gates, truth tables) and embedded electronics, enabling students to understand hardware logic essential for AI hardware acceleration.
- Developed structured learning materials, project examples, and troubleshooting guides, resulting in a 30% improvement in student project success rates.

### **ORGANISATIONAL EXPERIENCES**

## The Chairman | KSM Internet of Things - UPNVJ | Aug 2022 - Jan 2024 | CERTIFICATE LINK

- Founded and led a student IoT community, growing active membership by 60% within one year.
- Initiated and supervised multiple IoT research projects, including AI-driven sensor networks and smart automation systems.
- Represented the organization as a **speaker at national seminars and IoT events**, sharing insights on embedded systems and applied AI.

## Head of Research and Technology Department | KSM Mekatronik - UPNVJ | Jan 2023 - Jan 2024

- Mentored 20+ students in programming, electronics, and robotics, fostering skill development in AI-integrated robotics.
- Led the development of competition robots for the **Indonesian Robotic Contest**, including a coin-flipper and autonomous dance robot.

## Head of the PLC Division | KSM Mekatronik - UPNVJ | Jan 2022 - Jan 2023

- Designed and implemented a **PLC training curriculum** (Fatek & Outseal), enabling members to master industrial automation workflows.
- Programmed and deployed PLC-based thematic robots showcased at national robotics competitions.

### Member of the Programming division | KSM Mekatronik - UPNVJ | Jan 2021 - Jan 2022

- Contributed to the design and assembly of electronic circuits and microcontroller-based systems.
- Developed embedded software using Arduino IDE (C++) for various robotics and IoT projects.
- Collaborated with cross-functional teams to deliver successful project outcomes in national competitions.

# Member of the Academic Division | Himpunan Mahasiswa Teknik Elektro | Jan 2022 – Jan 2023

- Provided academic mentoring and counseling for students preparing proposals for the **Student Creativity Program (PKM)**, resulting in increased student participation and readiness.
- Supported fellow students in navigating the **Merdeka Belajar Kampus Merdeka (MBKM)** program, offering guidance on academic and career opportunities.
- Facilitated study groups and acted as a resource hub for Electrical Engineering students participating in the **National Science Olympiad** (Mathematics & Physics).

#### **ACHIEVEMENTS**

- Students with the Most Achievements in 2023 | CERTIFICATE | PUBLICATION
- Best Presentation in National Scientific Writing Competition Gravity Festival 2024 | CERTIFICATE
- Best Presentation Engineering Research and Innovation Competition 2023 | CERTIFICATE
- 1st Place in National Essay Competition Industrial Fair Competition 2023 | CERTIFICATE
- 1st place in National Scientific Writing Competition Ceer's Scientific Fair 2023 | CERTIFICATE
- 1st place in National Essay Competition Education Fair 2023 | CERTIFICATE
- 1st Place in National Essay Competition Maulana Hasanuddin Competition 2023 CERTIFICATE
- 1st place in National Scientific Writing Competition Gebyar Civitas Sains Fisika 2023 | CERTIFICATE
- 1st runner up in Polinela Research Competition 2023 | CERTIFICATE
- 2nd place in National Scientific Writing Competition Komunitas Mahasiswa Fisika | CERTIFICATE
- 3rd place in National Scientific Writing Competition BEM FE Universitas Tidar 2023 | CERTIFICATE
- 3rd place in National Scientific Writing Competition Dies Natalis STIKes 2023 | CERTIFICATE
- 2nd place in Robotic Micromouse Competition PORSIMNAS Wimaya 2022 | PUBLICATION
- 3rd place in National Scientific Writing Competition Institut Teknologi Nasional 2022 | CERTIFICATE
- 3rd place in National Scientific Writing Competition Mechanical Festival 2021 | CERTIFICATE
- 2nd place in National Scientific Writing Competition Pekan Intelektual Bidikmisi 2020 | CERTIFICATE

#### **TECHNICAL SKILLS**

• Languages : Python, C++, SQL, HTML, CSS, JavaScript

• Frameworks: Pandas, Numpy, Sckit-Learn, Matplotlib, Streamlit, TKinter, Langchain, ReactJS, PWA

• Tools : MySQL, SQLite, Github, Gitlab

Platforms
Soft Skills
: Visual Studio Code, Cursor, Jupyter Notebook, Google colab
: People Management, Leadership, Excellent communication

# **CERTIFICATION**

- Artificial Intelligent from SanberCampus x ITB (Institut Teknologi Bandung) | January June 2025 | CREDENTIAL
- Internet of Things (IoT) Engineer Camp| Indobot Academy | August December 2022 | CREDENTIAL
- Basic AI | Dicoding Academy | <u>CREDENTIAL</u>
- Python Programming | <u>CREDENTIAL</u>
- Data Visualization | <u>CREDENTIAL</u>
- Web Developer | <u>CREDENTIAL</u>

# **PORTFOLIO**

FOR FURTHER PROJECT INFORMATION, PLEASE VISIT THIS LINK OR SCAN THE PROVIDED QR CODE. bit.ly/PortfolioNaufalFirdaus2025

