Muhammad Daffa Safriel Sabilillah

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Profile

- Automation engineering student and National robotics champion with hands-on expertise in industrial control systems and embedded microcontroller integration.
- Proven track record in leading interdisciplinary teams to deliver real-world automation solutions for manufacturing and maritime sectors.
- Driven by innovation and system-level thinking, with a strong focus on enabling smart manufacturing and digital transformation in industrial environments.

Education

Sepuluh Nopember Institute of Technology – *GPA: 3.21/4.00* Aug 2022 – Present

Applied Bachelor's Degree(D4) in Electronic Automation Engineering

Professional Experiences *(selected)*

PT. Unilever Indonesia – *System Engineer Intern* Feb 2025 – Present

- Developed a digital traceability method to streamline lost-slip detection in warehouse operations, reducing search time from daily to minutes and preventing potential annual losses of over Rp1.5 billion.
- Engineered real-time diagnostic grid for logistic flow, accelerating bottleneck resolution latency by 24%.

PT. Pertamina Trans Kontinental – *Project Leader of ARSY B MARK II* Aug 2023 – Nov 2023

- Led the development of a remote-controlled rescue buoy to improve emergency response for Man Overboard (MOB) incidents at jetty and refinery areas, reducing retrieval time from 3–5 minutes to under 1 minute.
- Improved safety response efficiency by 75% compared to conventional ring buoys, enabling faster intervention in high-risk offshore and industrial environments.

Banyubramanta Underwater Robotics Team – *Head of Electrical Technician Division* Feb 2023 – Present

- Led a 5-member electrical team in a 6-month underwater robotics development, aligning designs with mechanical/software subsystems to deliver a mission-ready robot for International competition.
- Engineered Electrical subsystems for Autonomous Underwater Vehicle (AUV), including safety power distribution, emergency shutoff, and PID-based control system. Boosted system reliability and operational safety.

PT. Innoveam Indonesia – *Electrical Technician of Shooting Target Robot* Jul 2024 – Aug 2024

- Developed electrical system of the target shooting robot, achieving a reduction of non-productive time of up to 96% and improving safety by reducing unnecessary movement in the direct fire zone.

Awards & Achievements *(selected)*

1st Place National Kontes Robot Bawah Air Indonesia [Credential] *by PUSPRESNAS* Jul 2024

Achieved 1st place at the Indonesian Underwater Robot Contest 2024, standing out among 18 top universities.

Best Strategy National Kontes Robot Bawah Air Indonesia [Credential] *by PUSPRESNAS* Jul 2024

Coordinated interdisciplinary teams as Project Officer, delivering best mission execution among national competitors.

1st Place Mate ROV ASEAN [Credential] *by Mate ROV* May 2023

Designed and deployed a remotely operated underwater robot (ROV) to execute precision subaquatic missions.

Impact Projects *(selected)*

Food Dehydrator [Docs]

- Designed the hardware for a food dehydrator aimed at helping SMEs optimize fruit drying, improving reliability over traditional sun-drying methods. Utilized ESP32 for temperature control and real-time monitoring.

Smart City: IoT-based Earthquake and Wind Speed Detection System [Docs]

- Engineered the hardware for an IoT device that detects early signs of natural disasters via seismic and wind speed sensors. Integrated data visualization through a website interface using ESP32 and Blynk platform.

Smart Farm IoT Device [Docs]

- Independently developed an IoT-based agriculture device using ESP32 and Blynk, featuring humidity, temperature, TDS, and pH sensors. Enabled real-time data access and improved irrigation control for remote farms.

Skills

Embedded Systems: STM32; ESP32; Arduino; Omron PLC; Mitsubishi PLC; CANBus.

Design: Electronics Design (KiCad, EasyEDA); 3D Modeling(Fusion 360).

Automation: PID Control; Object Detection (YOLO); AGV Queue Logic; Fuzzy Logic.

Organizational: Interdisciplinary Collaboration; Project Management; Agile Workstyle.