Adill Deswal Agi Firmansyah

Electrical Engineering Undergraduate Student || Mechatronics | Automation & Control System || PLC · AIoT | Ladder Diagram · C++ · Python

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Professional Summary

Bachelor of **Electrical Engineering** with a focus on **Mechatronics**, **Automation** and **Control Systems**. I am interested in developing skills in the field of industrial control with future technologies such as the **Internet of Things (IoT), Embedded Systems**, and **Artificial Intelligence (AI)** through practical projects, simulations, and programming using **Python**, **C++** on microcontroller platforms such as **Arduino** and **ESP32** as well as creating efficient integration between **hardware** and **software**. Currently I am open to practical work or internship opportunities to apply and develop my potential and expertise in industrial and technological fields.

Education

- **Bachelor of Electrical Engineering**
  Universitas Singaperbangsa Karawang, 2023 – Present
- **Vocational High School – Industrial Electronics Engineering**
  SMKN 1 Kota Cirebon, 2020 – 2023

Technical Skills

- **Programming**
  Python, C++, Ladder Diagram (PLC)
- **Automation & Control**
  PLC Omron, Relay Logic, PID Control, Mathematical Modeling, Numerical Simulation
- **Embedded, IoT & AI**
  Arduino, ESP32, MQTT, OpenCV
- **Software & Tools**
  Python, Arduino, Proteus, KiCAD, CX-Programmer, FluidsimP, Fusion 360, Kodular

Experience

- **Energy Distribution Division of Electrical Department – Electric Vehicle Team**
  Universitas Singaperbangsa Karawang, May 2025 – Present
  - The Energy Distribution Division's primary responsibility is to ensure the efficient and effective distribution of power to all electric vehicle components, as well as the maintenance of related components.
  - Design and ensure efficient power distribution from the battery to the controller, motor, and accessory systems, while minimizing power loss.
  - Assemble wiring harnesses neatly and safely in accordance with electrical safety standards.
  - Conduct routine inspections, troubleshooting, and component repairs.
  - Ensure all electrical components operate optimally under high-load conditions during vehicle testing.
- **Student Intern – Team Projects**
  CV Mandatera Tech, Aug 2022 – Sep 2022
  - Involved in Team Projects
  - Designing concepts, building, assembling, and programming prototypes.
  - Integrating all components for embedded systems such as microcontrollers with IoT systems such as mobile apps and MQTT.
- **Student Intern – Electrical Maintenance**
  PT Arteria Daya Mulia, Jun 2022 – Aug 2022
  - Actively involved in the operational maintenance of industrial electrical systems to ensure reliable power supply.

- Assist the technical team in diagnosing and repairing faults in industrial electrical systems and production machinery, including performing routine maintenance on industrial generator sets and distribution substations.
- Inspect the physical condition of cables, control panel terminations, and other electrical components to prevent system failures.
- Support the implementation of preventive maintenance schedules and compile reports documenting repair and inspection results.
- Implement electrical safety procedures (K3 Listrik) when handling live components.

Projects

- Sistem Monitoring Konsumsi Daya Baterai pada Kendaraan Listrik Singaperbangsa EV-1
- Optimasi Sistem Kendali PID Adaptif Pada Drone Quadcopter Untuk Stabilisasi Altitude dan Attitude saat Bermanuver Secara Otonom
- Smart Traffic Monitoring System Berbasis YOLOv11 untuk Deteksi, Penghitung dan Analisis Kepadatan Kendaraan di Lalu Lintas Secara Real-Time
- Implementasi Simulasi Gerak Robotic Arm 6-DOF berbasis 3D Modeling
- Implementasi Sistem Filtrasi Air Berbasis Internet Of Things Dan Fuzzy Logic Dengan Media Filter Limbah Sabut Kelapa Bertenaga Mikrohidro Untuk Kebutuhan Mandi, Cuci, Dan Kakus
- Smart Breakwater - Sistem Pengawasan Ancaman Gelombang Laut Bagi Mangrove Muda Berbasis IoT Dan Fuzzy Logic Guna Mitigasi Dampak Climate Change
- Simulasi Proses Unit Produksi dalam Proses Assembly dan Sortir secara Otomatis menggunakan MPS Distributing, Pick Place dan Sorting Unit
- Simulasi Sistem Kendali Mesin Bending and Punching dengan 3 mode kerja berbasis Pneumatic Linear Actuator dan Semi-Rotary Actuator

Licences dan Certifications

- **Mechatronic Competitor Certification**
  Festo Didactic, Oct 2022
- **Sertifikat Kompetensi Industri Semikonduktor dan Komponen Elektronik**
  Badan Nasional Sertifikasi Profesi (BNSP), Mar 2023 – Expires Mar 2026
- **Workshop dan Pelatihan Internet of Things (IoT) bagi pengajar**
  PT Nusabot Inovasi Teknologi, Jun 2023

Honors and Awards

- **Best Presenter Seminar Nasional Teknik**
  Fakultas Teknik Universitas Singaperbangsa Karawang, Nov 2025
- **Juara III Lomba Karya Tulis Ilmiah (LKTI)**
  UNSIKA National Innovation Challenge (UNIC), Sep 2024
- **Juara 1 Engineering Competition**
  BEM FT UNSIKA, Jul 2024
- **Medallion of Excellence II bidang Mekatronika tingkat Nasional**
  Kementrian Pendidikan, Kebudayaan, Riset dan Teknologi; Pusat Prestasi Nasional; Balai Pengembangan Talenta Indonesia, Oct 2022
- **Juara 1 LKS SMK bidang Mekatronika tingkat Provinsi Jawa Barat**
  Dinas Pendidikan Provinsi Jawa Barat, Jul 2022