MUHAMMAD EL REZGA KARMITA

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Bogor, Indonesia

A final-year student in the D4 Computer Engineering Technology program at IPB University's Vocational School. Possesses a strong interest and demonstrated competence in Hardware, Networking, Internet of Things (IoT), and Automation. Has successfully applied this expertise to practical projects, including SOLTARINE (a Solar-Powered Power Bank) and an IoT-based hydroponic system. Characterized by high curiosity, responsibility, adaptability, strong communication skills, and a results-driven approach to problem-solving.

Education

Vocational School, IPB University Bogor, Indonesia   Aug 2022 - Present
Teknologi Rekayasa Komputer
- GPA   : 3.65 (7th semester)
- Relevant Coursework : Computer Networking Fundamentals, Network Application Administration, Routing and Switching Technology, WAN Technology, Computer Network Security, Cloud Computing Technology.

Work Experience

Independent Internship – IoT Engineer (BRMP Agroclimate and Agricultural Hydrology) Jan - Apr 2025
- Designed and developed an IoT-based monitoring and control system for hydroponic growing media.
- The system included temperature, TDS, pH, and ultrasonic sensors, as well as an automatic pump for liquid nutrient distribution.
- Deployed the monitoring system on a cloud platform for public and real-time access.
- Contributed to the 3D design of the hydroponic system and the planning of its electrical installation.

Industrial Internship – IoT Engineer (**BRMP Agroclimate and Agricultural Hydrology)**   Aug – Dec 2025
- Developed an end-to-end IoT system for aquaponics automation, featuring real-time water quality monitoring and automated fish feeding control.
- Integrated a complex multi-sensor array (Temperature, TDS, pH, Ultrasonic, Turbidity) and engineered a high-precision mechanism for the automatic fish feeder.
- Deployed the monitoring system to a Cloud platform, enabling real-time data telemetry and public accessibility via web and mobile interfaces.
- Led the mechanical design for 3D device enclosures and managed the complete electrical wiring and hardware installation.

Project Experience

PLC Trainer   Apr - Jun 2024
- Designed and implemented an interactive PLC Trainer based on the Omron CP1E PLC, aimed at serving as a practical learning platform for automation control systems.
- Designed detailed control and power wiring to ensure safe and proper connectivity between the PLC and various inputs (sensors) and outputs (actuators).

SOLTARINE Project   Feb - Jun 2024
- Designed and developed a solar-powered power bank with automatic sun-tracking capability.
- Successfully generated 2000W of power, capable of charging multiple electronic devices simultaneously (especially mobile phones).
- Designed an efficient and safe electrical flow according to safety standards, ensuring optimal power distribution from solar panels to end devices.

GROVE UGV Project   Sep - Des 2024
- Designed and developed an Unmanned Ground Vehicle (UGV) for agricultural applications in dry land (chili plantations) with remote control capabilities.
- The UGV can operate on dry land and carry loads up to ± 70 kg, supported by an efficient drive system.
- Designed and implemented the UGV's mechanical components, including frame construction and gearbox calculation for torque and performance optimization.

Training & Professional Development

Cisco Certified Network Associate (CCNA) - Cisco Networking Academy   Juni 2024
- Official Cisco certification in the field of networking, covering routing, switching, IP addressing, security fundamentals, and automation.

Automation Engineer – Electrical Bootcamp (Kelas Engineer)   Mar 2025
- Mastered the basics of PLC programming through intensive training that included the use of industry-standard PLC software for control logic.
- Gained comprehensive understanding of PLC architecture, types, and practical applications in various industrial automation systems.
- Applied automation concepts by developing and testing simulation projects using Factory I/O, improving skills in control system design and troubleshooting.

Skills

- Technical Skills   : Winbox, Microsoft Office, C++.
- Soft Skills   : Honest, communication, teamwork, adaptability, problem-solving, time management, leadership.
- Languages   : Indonesian and English (Intermediate).