

MUHAMMAD JARDIN SAPUTRA

Automation Engineer

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PROFILE

I am Muhammad Jardin Saputra, Undergraduate of Bachelor's Applied Degree (D4) student in Automation Engineering at Politeknik Perkapalan Negeri Surabaya (PPNS). I have a strong interest and competencies in Industrial Automation, PLC, SCADA & HMI, Instrumentation, Embedded Systems, and Robotics. During my studies, I actively participated in robotics competitions and scientific writing competitions at both regional and national levels, earning several achievements and awards. My academic, research, competition, and industrial internship experiences have strengthened my analytical thinking, teamwork, and problem-solving skills. I am highly motivated to learn and contribute to the advancement of automation and industrial technologies.

EDUCATION

Shipbuilding Institute of Polytechnic Surabaya
Bachelor's Applied Degree - Automation Engineering

Surabaya, East Java
2022 – 2026

GPA : 3.56 / 4.00

Final Project : DEVELOPMENT OF A* PATH PLANNING ON KRSBI-B FOR DYNAMIC OPPONENT AVOIDANCE BASED ON ROS AND GAZEBO.

WORK EXPERIENCE

PT. Teknik Tadakara Sumberkarya

August – December 2025

Electrical Technician.

Jobdesc :

- Performed panel wiring, electrical panel assembly, cable routing, component installation, and system testing in accordance with industry standards.
- Wiring Panel MCC, MSB AFT FRIGATE, MSB FWD FRIGATE, ESB, and DB FRIGATE
- Designed and fabricated panel frames and component layouts for the Engine Room Ventilation Panel, taking into account space efficiency, ease of installation, and maintenance.
- Make a training kit based on the Zelio Smart Relay as a learning tool for technicians and operators.
- Conducting functional testing, troubleshooting, and system verification to ensure safe, reliable system performance that meets specifications.
- Collaborating with the engineering team in the system design, assembly, and testing processes.

PROJECT EXPERIENCE

Automatic Water Filling and Temperature Control System Design and Simulation Using OMRON PLC and Visual Basic HMI (2024)

- Developed an automated water filling and temperature control system using OMRON PLC and Visual Basic HMI with RS232 communication, real-time monitoring, and automatic control of pumps, heaters, and alarms.

Electronic Filling System (E-Fill) (2025)

- Integrated Weintek HMI with SCADA systems, programmed Omron CP2E PLC, designed electrical wiring, and supported automated liquid filling processes with real-time monitoring.

Vehicle Classification, Counting, and Daily Revenue Monitoring System Using YOLO, Microcontrollers, and MySQL-Based Web Application (2025)

- Implemented a vehicle detection and classification system using YOLOv5 integrated with microcontrollers and a MySQL-based website to count vehicles and monitor daily revenue in real time.

Automatic Bottle Capping Prototype Based on Microcontrollers and Fuzzy Logic Method (2025)

- Implemented automatic bottle capping prototype using Fuzzy Logic to optimize the capping process. The system integrates rotary motors, servo motors, and conveyors to reduce leakage risks and improve sealing consistency.

BOOTCAMP AND CERTIFICATIONS

- TOEIC Certificate – Score: 525
- OpenCV BootCamp – OpenCV University, 2026
- Wadhvani Foundation – Entrepreneurship Development Program

AWARDS

- Finalist Top 20 and Top 4 Category Consumer Goods – Science HackInfest by PT SUCOFINDO (BUMN), 2025
- Top 6 Finalist – INVASI Scientific Writing Competition, Udayana University, 2024
- 3rd Place Regional 2 – Indonesia Robot Contest (KRI), Wheeled Soccer Robot Division, 2024
- 1st Favorite Winner – SNSC Scientific Writing Competition, Sahid University Jakarta, 2023
- National Honorable Mention – Indonesia Robot Contest (KRI), Wheeled Soccer Robot Division, 2023
- Regional 2 Honorable Mention – Indonesia Robot Contest (KRI), Wheeled Soccer Robot Division, 2023

ORGANIZATION EXPERIENCE

Gerhana Dewaruci Team Roboscoccer On Wheeled – Politeknik Perkapalan Negeri Surabaya

Programmer Division

Dec 2022 – Juli 2024

Lead of Programmer Division

Juli 2024 – Juli 2026

- Developed control algorithms for autonomous soccer robots using STM32, Embedded C/C++, and an omni360 camera system.
- Led Research & Development (R&D) activities in sensor calibration, actuator integration, and embedded software development to improve the robot's performance and reliability.
- Coordinated and led a team of 6+ programmers in designing the robot's programming architecture.
- Successfully developed ROS 2-based firmware for real-time communication, sensor integration, algorithms, and system coordination among autonomous robots.
- Implemented embedded programming, sensor integration, and serial communication between microcontrollers and mini PCs/laptops.
- Collaborated with the mechanical and electrical teams to ensure seamless hardware and software integration.
- Performed debugging, testing, troubleshooting, and system validation to optimize robot performance in the Indonesian Robot Contest (KRI).

SCIENTIFIC PUBLICATIONS

- **Implementation of Relative Object Distance Estimation Based on ROS 2 for Soccer Robots Using YOLO and a 360° Omnidirectional Camera** – Elkolind Polinema: Journal of Electronics and Industrial Automation (SINTA 4), 2026.
- **Predicting Real Distance for Wheeled Soccer Robot Using YOLO Architecture** – IJICOM: International Journal of Informatics and Computation (SINTA 4), 2025.
- **Implementation of Rotary Encoder-Based Odometry System for Wheeled Soccer Robot Navigation** – JURITEK: Scientific Journal of Mechanical Engineering, Electrical Engineering, and Computer Science (SINTA 5), 2025.

SKILL

- **Technical Skills** : PLC, SCADA, HMI, System Control, STM32, ESP32, ROS2, OpenCV, YOLO, Python, C/C++, PHP, JavaScript, MySQL, Serial Communication, MATLAB, AutoCAD, Visual Basic, Cable Management, Wiring.
- **Soft Skills** : Teamwork, Problem Solving, Troubleshooting, Analytical Thinking, Communication Skills, Adaptability, Time Management, Innovation, Responsiveness, Fast Learning.
- **Languages** : Indonesian, English