

Juhen Fashikha Wildan

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PROFESSIONAL SUMMARY

Robotics & AI Engineering graduate (Universitas Airlangga, 2026) specializing in Computer Vision and Industrial Automation, with hands-on experience deploying real-time detection and tracking systems in live manufacturing environments — including a 97%-precision inspection pipeline and multi-camera CCTV monitoring systems for a global musical instrument manufacturer. Seeking to apply this Computer Vision/Robotics foundation to an Applied AI Engineer role.

EDUCATION

Universitas Airlangga – Surabaya, Indonesia

Aug 2022 - Jul 2026

Bachelor of Engineering (S.T.) in Robotics and Artificial Intelligence Engineering,
Graduated July 2026 | GPA 3.72/4.00

Thesis: Automated Component Detection and Completeness Classification.

- Engineered an EfficientDet-based inspection system for a leading musical instrument manufacturer.
- Integrated operational insights from site stakeholders into custom data collection and annotation workflows, ensuring high-fidelity training data for model development.
- Optimized the system architecture to achieve 97% classification precision with a real-time latency of 0.55-0.56s per package, effectively surpassing the 2.0s operational limit for seamless integration into high-speed production lines.

Relevant coursework: Computer Vision, Deep Learning, Robotics, Automated System

PROFESSIONAL EXPERIENCE

PT. Yamaha Musical Products Indonesia – Pasuruan, Indonesia

Feb 2025 - Aug 2025

Process Automation Engineer (Intern)

- Follow-Me Tour Robot: Deployed a dual-mode ROS 2 control stack (PS3 teleop + autonomous person-following) on two Raspberry Pi nodes, integrating Kalman-filter state estimation with LiDAR/ultrasonic sensor fusion to enable real-time avoidance of static and dynamic obstacles for on-site tour operation.
- Material Washing Analytics: Built and productionized a YOLOv11s computer-vision pipeline with a custom-labeled dataset to automate dipping-duration monitoring, replacing a fully manual workflow and achieving stakeholder sign-off for operational use on the shop floor.
- Architected a multi-threaded Python backend processing live RTSP CCTV streams with spatial-temporal tracking to calculate dipping durations in real time, backed by a fault-tolerant watchdog process and automated SQL logging for continuous, unattended operation.
- Pudu Robot Operational Alerting System: Developed an automated alerting system deploying YOLOv8 across three concurrent CCTV streams, curating a custom dataset via Labellmg for precise robot and station-entry detection.
- Implemented a spatial-temporal tracking engine and event-driven state machine that triggers physical sirens and real-time operator alerts for material-delivery events, enabling continuous monitoring in a live manufacturing environment.

PT. Adhikara Wiyasa Gani – Surabaya, Indonesia

Sept 2024 - Jan 2025

Computer Vision Engineer (Intern)

- Prototyped an industrial-grade QR code detection pipeline (Python, OpenCV, MindVision SDK, Huateng Vision cameras) with a custom Tkinter GUI for real-time control over ROI, exposure, and Otsu's thresholding — validated through hands-on testing with successful detection across varied lighting conditions.
- Led a systematic optimization study across 24 configurations (5–20cm focal heights, 0.5–3.0cm QR dimensions, 30 samples per test case), achieving 95% detection reliability through iterative parameter tuning based on data-driven analysis of 700+ controlled test samples.

ORGANIZATION

Kombo Unair – Surabaya, Indonesia

Apr 2024 - Feb 2025

Research & Development Team

- **Omnidirectional Kinematics:** Researched 3-wheel omnidirectional drive mechanisms and mobile robot kinematics to analyze platform maneuverability and structural design constraints.
- **Autonomous Navigation:** Investigated autonomous navigation stacks, focusing on the A* algorithm for global path planning and the DWB planner for real-time local obstacle avoidance and trajectory control.

PUBLICATION

- **Co-Author (2nd Author):** "Multi-microcontroller system for Mecanum robots with gripper-shooter mechanisms" – IAES International Journal of Robotics and Automation (IJRA), 2025. Indexed in Scopus Q4 and Sinta 2.
- **Lead Author (1st Author):** "A Review: Artificial Intelligence Related to Agricultural Equipment Integrated with the Internet of Things" – Journal of Advanced Technology and Multidiscipline (JATM). Garnered 950 full-article views.

SKILLS

Programming languages: Python, C++, MATLAB, Bash/Shell Scripting, HTML.

Software & Frameworks: OpenCV, PyTorch, TensorFlow, YOLO, Docker, ROS 2, Git, MySQL.

Operating Systems: Linux (Ubuntu, Lubuntu), Windows.

Core Competencies: Computer Vision, Camera Calibration, Object Detection/Tracking, Spatial-Temporal Analysis, Industrial Automation, Experimental Analysis, Embedded Systems (Raspberry Pi), Real-Time Monitoring.

Languages: Indonesia (Native), English (Professional Working Proficiency).

CERTIFICATION

- Samsung Innovation Campus Batch 5 (2023-2024).
- Computer Vision – Kaggle.
- Build Your Generative AI Productivity Skills – Microsoft & LinkedIn.