



## CONTACT

**LOCATION**  
Bandung, West Java, Indonesia

**PHONE**  
+62 823-8848-8916

**EMAIL**  
aliyus.hedri@gmail.com

**LINKEDIN**  
linkedin.com/in/aliyus-hedri

## LANGUAGES

**Indonesian** — Native  
**English** — Intermediate / Working proficiency

## SKILLS

**Programming**  
C/C++ (Arduino embedded), Python (OpenCV, data, AI)

**Microcontroller & Embedded**  
Arduino, ESP32, STM32, Raspberry Pi, sensor interfacing (IMU, camera, ranging)

**Robotics**  
ROS/ROS2, SLAM, sensor fusion, mobile & legged robot control, servo/DC actuators

**Artificial Intelligence**  
Computer Vision (YOLOv8, OpenCV), ML fundamentals, NumPy/Pandas, TensorFlow/PyTorch

**Internet of Things**  
Wi-Fi, MQTT, HTTP/REST API, sensor integration

**Tools**  
MATLAB/Simulink, Git/GitHub, Linux, Microsoft Office

# ALIYUS HEDRI

Robotics, Embedded Systems & IoT Researcher

## SUMMARY

Master's (M.Sc.) student in Electrical Engineering at Telkom University, focusing on robotics, SLAM, embedded systems, IoT, and AI. Experienced in leading and delivering innovative projects ranging from a hexapod robot and IoT monitoring systems to 3D SLAM implementation, with strong skills in programming, systems integration, and team leadership.

## EDUCATION

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|---------------------------------------------------------------------------------------------------------------------------|--------------------|
| <b>M.Sc. in Electrical Engineering, Telkom University</b><br><i>Master by Research program — Bandung</i>                  | <b>Ongoing</b>     |
| <b>B.Eng. in Electrical Engineering, Telkom University</b><br><i>GPA 3.8 / 4.0 · APERTI BUMN Scholarship Awardee 2022</i> | <b>2022 – 2026</b> |
| <b>SMA Negeri Plus Provinsi Riau, Pekanbaru</b><br><i>Science major — graduated with good standing</i>                    | <b>2019 – 2022</b> |

## INTERNSHIP EXPERIENCE

- |                                                                |                             |
|----------------------------------------------------------------|-----------------------------|
| <b>Mechatronics Engineer — PT Arthatronic Studio Teknologi</b> | <b>Jun 30 – Aug 9, 2025</b> |
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## PROJECT EXPERIENCE

- |                                                                                                                                                                                                                                                                                                                                                           |                       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| <b>Final Project — 3D SLAM for AGV using FAST-LIO</b>                                                                                                                                                                                                                                                                                                     | <b>2026</b>           |
| <ul style="list-style-type: none"><li>Adapted the FAST-LIO algorithm (originally for LiDAR) to work with four low-cost RGB-D Kinect V1 cameras for AGV navigation in small-to-medium industry.</li><li>Built a distributed computing architecture (STM32 + Mini PC) on ROS2 Jazzy targeting <math>\leq 10</math> cm RMSE localization accuracy.</li></ul> |                       |
| <b>TIRNARA — IoT Water Quality Monitoring for Fish Farming</b>                                                                                                                                                                                                                                                                                            | <b>2025</b>           |
| <ul style="list-style-type: none"><li>Portable IoT-based biofloc water-quality monitoring product powered by renewable energy to improve fish cultivation yield.</li><li>Qualified as a participant in PIMNAS 2025 (national student scientific week, PKM-KI category).</li></ul>                                                                         |                       |
| <b>IoT Household Water Quality Monitoring System</b>                                                                                                                                                                                                                                                                                                      | <b>Feb – Jun 2025</b> |
| <ul style="list-style-type: none"><li>IoT prototype for water-quality monitoring (pH, temperature, turbidity sensors) using ESP32, streaming real-time data via MQTT/HTTP to a cloud dashboard.</li></ul>                                                                                                                                                 |                       |
| <b>Hexapod Robot with Auto-Balance &amp; AI Object Detection</b>                                                                                                                                                                                                                                                                                          | <b>2023 – 2024</b>    |
| <ul style="list-style-type: none"><li>Designed a six-legged robot with IMU-based automatic balancing and real-time YOLOv8 object detection for autonomous navigation.</li><li>As Team Leader, led the robot to Finalist (top 8) at the 2024 Indonesian Robot Contest (KRI), SAR division.</li></ul>                                                       |                       |
| <b>TOMOT — Plant Monitoring Stick (PKM-KI)</b>                                                                                                                                                                                                                                                                                                            | <b>Mar – Nov 2024</b> |
| <ul style="list-style-type: none"><li>Portable soil monitoring device (pH, moisture, NPK, temperature sensors) to help farmers optimize fertilization.</li><li>Won the Bronze Medal at PIMNAS 37 (2024) in the Presentation category.</li></ul>                                                                                                           |                       |

## ORGANIZATIONAL EXPERIENCE

- |                                                                                         |                    |
|-----------------------------------------------------------------------------------------|--------------------|
| <b>Lab Coordinator — EIRRG (Electronics &amp; Intelligence Robotics Research Group)</b> | <b>2024 – 2025</b> |
| <b>Basic Computer Laboratory Assistant</b>                                              | <b>2023 – 2025</b> |
| <b>Committee Member — Telkom University Student Orientation (PKKMB)</b>                 | <b>2023</b>        |

## ACHIEVEMENTS & AWARDS

- Top 20 Outstanding Students in Student Affairs** — Telkom University, 2024
- Finalist, Indonesian Robot Contest (KRI) 2024** — SAR division, as Team Leader (ARJUNA)
- Bronze Medal, PIMNAS 37 (2024)** — Presentation category, PKM Innovative Work (TOMOT)
- Participant, PIMNAS 2025** — PKM-KI category (TIRNARA)
- 2nd Place, Laboratory Competency Contest** — Biology Fair 2020, Universitas Riau
- Participant, Madrasah Science Competition (KSM) 2021** — Biology, Riau Province