# AMALDI TRI SEPTYANTO

amalditris@gmail.com | +6287879511259 | linkedin.com/in/amaldits | amaldits.github.io

## SUMMARY

Electrical engineering graduate with a string focus on IoT and robotics, holding a Bachelor's degree from Institut Teknologi Bandung. Tyan has gained valuable hands-on experience in developing firmware for embedded systems, both during and after his academic studies. With a passion for innovation and a commitment to pushing technological boundaries, he is eager to take on new challenge and contribute to impactful projects.

## EXPERIENCE

**PT. MIOTA INTERNATIONAL TEKNOLOGI – Jakarta, Indonesia**
*Fullstack IoT Engineer* *Dec 2023 – Present*

- Designed and implemented an embedded system to monitor printer usage, capturing key metrics such as page count, toner levels, and operational status.
- Optimized data acquisition and processing within the embedded system to ensure real-time tracking with minimal latency, while incorporating robust security measures to protect data integrity and prevent unauthorized access.
- Enabled remote access and real-time alerts through network integration, facilitating proactive maintenance and reducing printer downtime.
- Developed a high-precision location monitoring system for heavy container storage using RTK GPS technology, achieving accurate positioning and altitude measurement.
- Engineered real-time data processing algotihms to ensure reliable tracking of container locations in dynamic environments, enhancing operational visibility.

**PT. ARIA AGRI INDONESIA – Jakarta, Indonesia**
*Firmware Engineer* *Mar 2022 – Sep 2023*

- Created firmware for the Worker Tracker device, enabling the collection and transfer of field worker's location data to a single board computer, which then sends the data to the cloud for analysis.
- Developed firmware for the Turbo Spreader, a tool that calculates fertilizer distribution across specific coordinates and integrates the data into a platform, helping track and optimize fertilizer use over time.
- Maintained and documented the firmware to ensure clarity and organization, while also participating in daily standups and weekly sprint reviews to keep the team aligned and on track.

**PT. Movus Technologies Indonesia – Bandung, Indonesia**
*Firmware Engineer Intern* *Aug 2021 – Oct 2021*

- Enhanced performance by creating and refactoring 60% of the hardware subfeatures, supporting the application's goal of tracking user activity for car buyers through Movus.
- Identified and resolved 30% of the bugs encountered during firmware development, improving system stabilty and functionality.
- Reported progress regularly in daily scrum meetings and provided updates on firmware development during weekly scrums, ensuring alignment with project objectives.

**PT. IROSTech Solusi Inteligen – Bandung, Indonesia**
*Engineer Intern* *May 2019 – Aug 2019*

- Created a prototype to develop IoT (Internet of Things) technologies for household purposes using ESP32 as a microcontroller to control sensor and actuator
- Created a simple dashboard apps with a web-based as interface for users to control sensor and actuator through microcontroller up to 80% of finished

## PROJECTS

**Prototype Project: Oil Palm Fruit Sortation Machine** *Dec 2023 – May 2024*

- Undertook an independent project driven by curiosity to explore the application of OpenCV and machine learning models in agriculture, focusing on the soring of palm fruit.
- Developed a system that classifies palm fruit based on ripeness, fruit set level, and stalk presence. The system utilizes a mechanical hopper to sort and group the fruit into predefined categories, automating the sorting process for improved efficiency.

**Institut Teknologi Bandung – Bandung, Indonesia**

*Part-Time Research Assistant on Autonomous Tram Project* *Oct 2021 – Apr 2022*

- This project is a collaborative effort between (Institut Teknologi Bandung, INKA (Industri Kereta Api), riset.ai, and LPDP (Lembaga Pengelola Dana Pendidikan), with the goal of developing an autonomous tram system capable of operating without human intervention.
- Developed a data logging program that captures and records critical environmental data, including tram waypoint coordinates from the GNSS (Global Navigation Satellite System) and point cloud data from LIDAR (Light Detection and Ranging) sensors. This data is essential for the tram's navigation and obstacle detection.
- Designed and implemented the first prototype of the power system responsible for supplying energy to all sensors and the onboard computer used for logical calculations in the Autonomous Tram. This system ensures reliable and consistent operation of all components.
- Regularly reported project progress through bi-weekly updates, detailing the completion of scrum assignments and providing feedback on the previous week's tasks. This ensured alignment with project goals and facilitated continuous improvement.

*Part-Time Research Assistant on Autonomous Forklift Project* *Oct 2021 – Mar 2022*

- This project is a collaboration between ITB (Institut Teknologi Bandung) and CPIN (Charoen Pokphand Indonesia Tbk) with the objective of developing an autonomous forklift capable of navigating and localizing itself within an indoor facility.
- Conducted in-depth research on mobile robot localization, focusing on Adaptive Monte Carlo Localization (AMCL) for the prototype of the Autonomous Forklift. This research utilized the ROS (Robot Operating System) framework and the Gazebo simulator to model and refine the forklift's indoor navigation capabilities.

*Research Assistant on Laboratory of Advance Robotic ITB* *Sep 2020 – Aug 2021*

- Developed a platform for an autonomous drone, designed specifically for inspecting bridge structures. The drone autonomously detects and assesses damage, including cracks, moss, and uneven surfaces, enhancing the efficiency and safety of structural inspections.
- Documented and reported ongoing research through the thesis "Visual Investigation of Bridge Damage Using Autonomous Drone", providing monthly updates from the proposal stage through to the testing phase, ensuring thorough analysis and continuous progress.

## ORGANIZATIONAL EXPERIENCE

**EMBARGO 2018 - Bandung, Indonesia**

*Leader* *Aug 2017 – April 2018*

- EMBARGO stands for *Empati Berbagi Bersama Allegro*. Its a social activites carried out by electrical engineering students during their second year
- Made 20 teaching tools to help elementary school students study and enthusiasticly about understanding the lessons taught by their teachers
- Manage 100 less electrical engineering students to complete this event in 6 months of preparation
- Report all matters from proposal until the event itself in accountablity trial at the electrical student association

**KRSBI-H ITB Team – Bandung, Indonesia**

*Head of Electrical Division* *Jul 2019 – Oct 2020*

*Staff of Electrical Division* *Aug 2018 – Jul 2019*

- Managed 5 people of Electrical Division to complete the electrical related task to build 3 robust humanoid robots that can play well and win at KRI (Kontes Robot Indonesia) in one year less
- Coordinated with Mechanical and Programming Division about tasks that needs to be done in period of time for better robot performance
- Found and debugged the 75% of electrical problems that occur on making humanoid robots
- Developed an interface button design from hardware design until behavior logic for state control of robots

## EDUCATION

**SMA NEGERI 5 SURABAYA** *May 2016*
Natural Science

**INSTITUT TEKNOLOGI BANDUNG – BANDUNG, INDONESIA** *Oct 2021*
Bachelor of Engineering, Electrical Engineering

## ADDITIONAL

**Technical**:

*Robotic Development:* MATLAB, Python, C++, ROS, Autodesk Inventor, Altium, Linux
*Drone Development:s*Pixhawk, ArduPilot, PX4
*Backend Development:* Golang
*Internet of Things Development:* Arduino, MQTT, ESP32
*Others:* Microsoft Excel, Git, C#, Java

**Languages:** Indonesia, English