

Marc Anjaniana Ravelontsalama

Gertrūdes iela 54 • Riga, LV-1011, Latvia • marc.anjaniana@gmail.com • +37125577597
github.com/marcavel • linkedin.com/in/marcavel • marcavel.github.io/engineering_portfolio

Profile

Final-year Electrical-Electronics Engineering student at Selçuk University, currently on Erasmus+ exchange at Riga Technical University, seeking a mandatory curricular internship for the 8th and final semester. Hands-on experience in embedded systems and applied AI/ML, from custom STM32/ESP32 hardware to deployed deep learning models. Available from February 2027.

Skills

Programming Languages: Python, C, C++

Embedded Platforms & Protocols: STM32, ESP32, PIC - SPI, I2C, UART, USB, BLE

ML/CV Frameworks: PyTorch, OpenCV, TorchScript, ONNX

Software & Systems: Git/GitHub, Linux, FastAPI, FreeRTOS

Hardware/CAD: KiCad, Altium Designer

Languages: Malagasy (Native), English (B2), French (B2), Turkish (C1), German (A1)

Education

Riga Technical University

Erasmus+ Exchange Semester, Electrical and Electronics Engineering

Riga, Latvia

August 2026 - January 2027

Selcuk University

Bachelor of Science in Electrical-Electronics Engineering

Konya, Türkiye

2023 - 2027

Relevant Coursework: Embedded Systems, Microcontrollers, Control Systems, Computer Vision, Machine Learning & AI, PCB Design

Saint Joseph Secondary School

Baccalauréat, Scientific Track (Série C) - Graduated with Distinction

Antsirabe, Madagascar

August 2021

Experience

AutoDidactic Technologies

Artificial Intelligence & Software Development Intern

Istanbul, Türkiye

June 2026 - August 2026

- Trained a ResNet-18 classifier on 20,638 PlantVillage images across 15 pepper/potato/tomato disease classes, achieving 99.27% test accuracy and 0.99 macro F1 across classes with 152–3,209 images per class
- Benchmarked zero-shot cross-domain generalization on 100 real-world PlantDoc images, improving accuracy from a 13% baseline to 21% through field-simulation data augmentation and regularization
- Exported the model to TorchScript and ONNX (opset 12, dynamic batch axes) and served it through a FastAPI inference layer for real-time inference

ITRAS Group

Programmer & Robotics Intern

Antananarivo, Madagascar

November 2021 - June 2022

- Built and programmed multiple robotic platforms (PIC16F-series and Arduino-based) under senior engineers, including designing custom PCBs and learning embedded C and PIC microcontroller programming from scratch
- Engineered a line-following robot using a 9-channel QTR sensor array (400-cycle calibration routine), interrupt-driven turn detection, and PWM motor control, sustaining control loop rates up to 200 Hz
- Implemented encoder-based closed-loop position control for target-distance navigation on a wall-following robot

Projects

STM32 Hue Measurement System

February 2026 - May 2026

Engineering Design Course Project

- Built an I2C-based hue measurement system on STM32, interfacing a TCS34725 color sensor and SSD1306 OLED display with optimized sensor data acquisition and user-triggered measurements
- Designed and etched a single-layer PCB in KiCad (toner-transfer method, 2 iterations); validated color discrimination against known reference samples

Smart Greenhouse Automation System

December 2025 - February 2026

AI and Machine Learning Course Project

- Designed a rule-based fuzzy logic controller in MATLAB and deployed it as C++ inference code on an ESP32, driving 5 actuator outputs (fans, heaters, water pumps, and a stepper-motor shading mechanism) from 4 real-time environmental sensors (temperature, soil moisture, air humidity, light)
- Extended the controller with a TinyML regression model for predictive environmental regulation and built an asynchronous, JSON-based web dashboard to visualize fuzzy membership values and live actuator states

Certifications

Introduction to Deep Learning

BTK Akademi

April 2026

Modern Robotics – Foundations of Robot Motion

Northwestern University - Coursera

February 2023

Awards & Honors

1st Prize - Madagascar Robotics Cup

STEM4Good Madagascar

Antananarivo, Madagascar

June 2022

- Won 2 gold medals in the line-following robot competition
- Set a national speed record in line-following robots as a member of MTH (Madagascar Technology Hub)

3rd Prize - Mada Robot Contest 2021

Ministry of Youth and Sports of Madagascar, Robot Events Mada

Antananarivo, Madagascar

August 2021

- Designed an automated plant irrigation system for agricultural sustainability, serving as programmer and electronics technician

Turkiye Scholarship Recipient - YTB, 2022

Republic of Turkiye

Antananarivo, Madagascar

October 2022

- Fully funded undergraduate scholarship covering tuition, accommodation, stipend, and health insurance

Leaderships & Activities

Graphic Design Lead

African Students Union in Konya

Konya, Turkiye

December 2025 - Present

- Created the community's corporate visual identity and managed the design process for all digital communication materials