Embedded Systems Engineer – Software/Hardware Development | C/C++ | Embedded C | IoT | PCB Design

Mohamed Ali MAGHREBI

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Professional Summary

Robotics researcher at a Canadian university, with a degree in embedded systems engineering and a professional diploma in electrical engineering. My career path has been strengthened by several international internships. These experiences have allowed me to develop sharp expertise in emerging technologies. Driven by constant ambition and a strong inclination for scientific rigor, I thrive in environments where innovation, applied research, and technical complexity stimulate excellence.

Education

Master of Engineering | UQAR, Canada | 2025 – Present

Engineering Degree – Embedded Systems (EUR-ACE & CTI accredited) | ENET'Com, Tunisia | 2021 – 2024

Professional Bachelor's Degree – Electrical Engineering | ISET Radès, Tunisia | 2018 – 2021

High School Diploma – Technical Sciences | Mourouj 6 High School, Tunisia | 2017 – 2018

Technical Skills

Languages: C, C++, Python, Java, VHDL
Microcontrollers: STM32F4, ESP32, Heltec WiFi LoRa 32, LPC1768, Arduino, PIC16F
Protocols: UART, SPI, I2C, CAN, LoRaWAN
Tools: STM32CubeIDE, KEIL, Altium, Proteus, MATLAB, LabVIEW, TIA-Portal
Web/Mobile Development: HTML, CSS, JavaScript, Android Studio
Frameworks: Flask, Socket.IO, Selenium, Robot Framework
Databases: MySQL, Firebase
Operating Systems: Linux, Windows
Methodologies: Agile / Scrum

Professional Experience

Université du Québec à Rimouski – Canada | Apr. 2024 – Jul. 2024
Embedded Systems Intern – Final Year Project (IoT & Firmware)
- Designed a LoRa-based GPS tracker using Heltec modules.
- Developed real-time firmware in C/C++ for secure long-range communication.
- Built a real-time geolocation web platform using HTML, JavaScript, and Flask.

Chemnitz University – Germany / CRNS – Tunisia | Jul. 2023 – Aug. 2023
Hardware Development Intern – sEMG Medical Devices
- Designed PCBs for connected sEMG-based health monitoring systems.
- Integrated biosensors into embedded medical systems.

SAGEMCOM – Tunisia | Jun. 2023
Automation & QA Intern – Software Testing
- Automated functional tests using Robot Framework and Selenium.
- Developed a front-end control interface using HTML, CSS, and JavaScript.

Intercom Technologies – Tunisia | Jun. 2022 – Jul. 2022
FTTH Network Intern – Optical Network Planning
- Designed FTTH network layouts for Orange France.
- Created technical documentation and deployment schematics.

Academic Projects

IoT-Based Smart Parking System | Oct. 2023 – Dec. 2023
- Designed an intelligent parking solution using IoT sensors for space detection.
- Built a mobile interface with Blynk and visualized data in real time via ThingSpeak.
- Implemented secure access and optimized space allocation logic.

Smart Locker System with Facial Recognition | Nov. 2022 – May 2023
- Developed an ESP32-based locker system with access via facial recognition, QR codes, and RFID.
- Created a Flask-based backend with real-time Socket.IO communication.
- Secured data storage with MySQL and phpMyAdmin.
- Designed an interactive user interface with HTML and CSS.

Languages

- English – Full professional proficiency (B2)
- French – Full professional proficiency (B2)

Community Involvement

IEEE ENET'Com | 2022 – 2023
- Competed in IEEEXtreme 24-hour programming contest; developed algorithms under constraints.

ENET'Com Robotics Club | 2021 – 2022
- Built award-winning autonomous robots; focused on sensor optimization and trajectory planning.

Enactus ISET Radès | 2019 – 2020
- Communication lead; coordinated events and improved institutional visibility.