

MOHAMED ALI MAGHREBI

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Embedded Systems Engineer

Profil

Graduated in **Embedded Systems Engineering** and holder of a **Bachelor's degree in Electrical Engineering**, I have enhanced my background through several internships, the most recent of which was in Canada. These experiences have sharpened my expertise in emerging technologies. Driven by unwavering ambition, I am determined to grow in an environment where innovation and technical complexity fuel my pursuit of excellence.

Education

Engineering in Electronic Systems and Communication - Embedded Systems	<i>Tunisia</i>
National School of Electronics and Telecommunications of Sfax - ENET'Com -	Sep. 2021 – Sep. 2024
Professional Bachelor's Degree in Electrical Engineering - Automation and Industrial Computing	<i>Tunisia</i>
Higher Institute of Technological Studies of Radès - ISET Radès -	Sep. 2018 – Jul. 2021
High School Diploma in Technical Sciences	<i>Tunisia</i>
Mourouj 6 High School	Sep. 2017 – Jun. 2018

Professional Experience

University of Quebec at Rimouski	Apr. 2024 - Jul. 2024
<i>End-of-Studies Internship – Embedded Development and IoT</i>	<i>Canada</i>
<ul style="list-style-type: none">Designing and deploying a GPS system using LoRa technology, ensuring long-range communications, with embedded development of Heltec microcontrollers in C/C++ and optimization of wireless flows.Developing a complete software solution, including a web interface in HTML, CSS, and JavaScript for real-time visualization, and a Flask server in Python for secure user and data management.	
Chemnitz University, Germany – Research Center of Sfax, Tunisia	Jul. 2023 - Aug. 2023
<i>Engineering Internship – Embedded Hardware Development</i>	<i>Remote</i>
<ul style="list-style-type: none">Designing advanced printed circuit boards (PCBs) for 4-layer wireless body sensor networks and 2-layer portable sEMG devices, integrating groundbreaking innovations in the field of connected healthcare.	
SAGEMCOM	Jun. 2023 - Jun. 2023
<i>Engineering Internship – Automated Testing and QA</i>	<i>Tunisia</i>
<ul style="list-style-type: none">Implementing an advanced optical system for the inspection of smart meter devices, integrating an optimized web interface in HTML, CSS, and JavaScript, while generating automated test reports via Robot Framework and Selenium, thereby ensuring the reliability of the inspected devices.	
Intercom Technologies	Jun. 2022 - Jun. 2022
<i>Technician Internship – Network Modeling and Deployment</i>	<i>Tunisia</i>
<ul style="list-style-type: none">Designing and deploying a FTTH fiber optic network in two phases for distribution, integrating collective modeling and technical documentation, including the Building Sheet, in partnership with the operator Orange.	
CAT/COLACEM	Feb. 2021 - Jun. 2021
<i>End-of-Studies Internship – Automation of Filtering with API</i>	<i>Tunisia</i>
<ul style="list-style-type: none">Developing an automation solution for filtering using pressure sensors, integrating Grafset, Ladder programming via Tia-Portal, API simulations, and a supervisory interface (HMI).	
MOTRA Electric	Feb. 2020 - Feb. 2020
<i>Refinement Internship – Electrical Design and Wiring</i>	<i>Tunisia</i>
<ul style="list-style-type: none">Actively contributing to the development of electrical wiring diagrams using AutoCAD, while precisely assembling an electrical cabinet.	

Academic Projects

Smart Parking Blynk, ThingSpeak	Oct. 2023 - Dec. 2023
<ul style="list-style-type: none">Implementing a smart parking system integrating IoT sensors to optimize space management, utilizing Blynk for the user interface and ThingSpeak for data collection and analysis, thereby ensuring secure access and enhanced operational efficiency.	
Year-End Project - Smart Locker System ESP Microcontrollers, Computer Vision	Nov. 2022 - May 2023
<ul style="list-style-type: none">Controlling various hardware components, such as microcontrollers, cameras, and readers, to establish secure access via facial recognition, QR codes, and RFID tags, while ensuring real-time communication through Socket.IO and Flask, guaranteeing secure activity logging in a MySQL database via phpMyAdmin, and designing an interactive user interface with HTML and CSS.	

JoystickLEDs | *Embedded C*

Apr. 2023

- Implementing the NXP LPC1768 microcontroller in Embedded C for real-time control of LEDs via a joystick allows for familiarization with ARM Cortex-M3 registers, implementation of interrupt routines, and optimization of commands, while mastering the integration of embedded architecture.

TrainConnect | *Android Studio*

Mar. 2023

- CDesigning an intuitive mobile application using Android Studio to simplify access to crucial information about train stations, including precise locations and available services.

SensFire App | *Raspberry Pi, Firebase*

Feb. 2023

- Developing a mobile application with Android Studio, integrating a DHT11 sensor and a Raspberry Pi microcontroller, allows for real-time monitoring of environmental parameters (temperature and humidity) via Firebase IoT, while optimizing cloud communications.

ImagePro GUI | *Matlab*

Dec. 2022

- Creating an advanced graphical user interface in MATLAB for image processing, allowing precise and intuitive manipulation of visual data, while integrating sophisticated image processing algorithms.

Year-End Project - CovidFeed App | *Robotics, Arduino, WinDev Mobile*

Nov. 2019 – May 2020

- Developing an autonomous distribution robot, controlled via a mobile application, integrating an Arduino microcontroller, a Bluetooth module, a power board for motorization, and a camera for real-time tracking. Designed to meet the requirements of contactless distribution during the COVID-19 pandemic.

Skills

Programming Languages: C, C++, Python, Java, VHDL

Development Tools: LabVIEW, ModelSim, MATLAB, Altium Designer, Proteus, AutoCAD Electrical, Tia-Portal, STM32 Cube-IDE, MobaXterm, KEIL-Vision, Xilinx ISE Design.

Development Boards: PIC16F, Arduino, Raspberry PI, STM32F4, ESP32, ESP 8266, Heltec WiFi LoRa 32, FPGA, Mbed LPC 1768.

Communication Protocols: UART, SPI, I2C, LoRa, CAN.

WEB/MOBILE Development: HTML, CSS, JavaScript, Android Studio.

Database: MySQL, Firebase.

Frameworks and Libraries: Flask, Socket-io.

Modeling System: SysML.

Operating Systems: Linux, Windows.

Project Management Methods: Agile/Scrum.

Soft Skills: Versatility, Flexibility, Team Spirit, Ingenuity

Voluntary Experience

IEEE ENET'Com - Active Member

Sep. 2022 – Jun. 2023

Participating in the management and optimization of technical projects, while taking part in IEEEExtreme, a global programming competition aimed at showcasing coding skills.

Robotics Club ENET'Com - Active Member

Sep. 2021 – Jun. 2022

Designing and programming autonomous robots, leading to victories in internal competitions, while mastering mechatronics and optimizing embedded algorithms.

Enactus Club ISET Radès - Communication and Media Team Leader

Sep. 2019 – Jun. 2020

Coordinating communication efforts to enhance the visibility of internal events and participating in national competitions of Enactus Tunisia.

Association of Creative and Conscious Youth - Volunteer

Sep. 2018 – Jun. 2019

Contribute to the organization of solidarity initiatives and support for vulnerable populations, while optimizing the management of humanitarian projects and strengthening skills in associative leadership.

Languages

Arabe : Native language

French : Professional competence – B2

English : Professional competence – B2