

# Mohammed Benouar

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Embedded Systems Engineer · Maintenance & Industrial Automation

## Professional Summary

Embedded Systems Engineer with an M.Sc. in Embedded Systems and practical experience in industrial automation, PLC supervision, and IoT development. Proficient in C/C++, embedded Linux, and communication protocols (UART, SPI, I2C, MQTT). Experienced with Siemens and OMRON PLCs, ESP32/Raspberry Pi platforms, and computer vision pipelines using OpenCV, TensorFlow, and Intel OpenVINO. Seeking a challenging role in embedded engineering or industrial automation.

## Professional Experience

### HASNAOUI GYPSUM PANEL

Maintenance & Production Manager

March 2025 – June 2025

Sidi Bel Abbes, Algeria

- Supervised and coordinated a team of production workers, optimizing task delegation and workflow efficiency.
- Deployed PLC-based automation upgrades on **Siemens S7** and **OMRON** systems, improving production line reliability and reducing manual intervention.
- Performed electrical troubleshooting and preventive maintenance to minimize equipment downtime.

## Projects

### Intelligent Road Traffic Management System

Master's Graduation Project — Entrepreneurship Center, Djillali Liabes University

2022 – 2023

- Designed a smart traffic infrastructure using computer vision and edge AI for real-time vehicle detection and flow analysis.
- Implemented object detection with **OpenCV** and **TensorFlow**, optimized for **Intel NCS2** via **OpenVINO** on **Raspberry Pi** under **Linux**.
- Managed build system with **CMake** and version control via **Git**.

### ESP32 IoT Environmental Monitoring System

Multi-sensor data acquisition and real-time dashboard

Personal Project

- Developed firmware in **C/C++** with **FreeRTOS** task scheduling on **ESP32**.
- Interfaced sensors over **I2C** and **SPI**; transmitted telemetry via **MQTT** protocol.
- Visualized real-time data using **Node-RED** pipelines and **Grafana** dashboards.

## Technical Skills

**Programming:** C, C++, Python

**Embedded & IoT:** ESP32/ESP8266, Raspberry Pi, Arduino, Siemens S7 PLCs, OMRON, Intel NCS2

**Protocols:** UART, SPI, I2C, CAN, MQTT

**Frameworks & Tools:** FreeRTOS, OpenCV, TensorFlow, OpenVINO, CMake, Git

**Systems & Platforms:** Embedded Linux, Node-RED, Grafana

**Industry Standards:** ISO, OSHA

**Soft Skills:** Team leadership, analytical thinking, adaptability, communication

## Certifications

### NVIDIA

Fundamentals of Deep Learning [View Certificate]

December 2022

## Education

### Djillali Liabes University

M.Sc., Embedded Systems

July 2023

Sidi Bel Abbes, Algeria

### Djillali Liabes University

B.Sc., Electronics

July 2021

Sidi Bel Abbes, Algeria

## Languages

### Arabic

Native

### French

Professional Proficiency

### English

Professional Proficiency