

# Nacer Boubkraoui

*Master's Student in Embedded Artificial Intelligence*

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## Profile

A dedicated Master's student in Embedded Artificial Intelligence at the Faculty of Applied Sciences Ait Melloul, Ibn Zohr University, with a strong foundation in computer engineering and hands-on expertise in embedded systems, machine learning, and deep learning. Seeking a six-month or longer research internship starting February 2026 as an end-of-studies internship to apply advanced knowledge in AI and embedded technologies within an innovative research environment.

## Education

2024 – Present **Master's Degree in Embedded Artificial Intelligence**, *Université Ibn Zohr*, Agadir, Morocco

Currently pursuing advanced studies in embedded AI systems, focusing on IoT applications and machine learning optimization for resource-constrained environments.

2018 – 2021 **Professional License in Embedded Computer Systems**, *Université Ibn Zohr*, Agadir, Morocco

Specialized in embedded systems programming, microcontroller development, and real-time systems design.

June 2018 **Baccalaureate in Physical and Chemical Sciences**, *Lycée Al Arak*, Taroudant, Morocco  
Graduated in scientific studies.

## Experience

May 2021 – July 2021 **Frontend Developer Intern**, *AJICOD*, Dcheira El Jihadia, Morocco

Developed user interface for school activity management system using Vue.js. Created reusable components and optimized application performance. Gained experience in modern frontend development practices and user experience design.

## Projects

November 2025 – Present **Intelligent Edge Health Gateway (IoT & AI)**, *Edge and Fog Computing*

Edge computing architecture for real-time medical monitoring. ESP32 captures vitals (SpO2, BPM, Temperature) and activity data, processed locally on Raspberry Pi gateway with MQTT, Node-RED, InfluxDB, and Grafana for low-latency healthcare analytics.

2022 – Present **Founder & CTO**, *mafquodat.com*, Digital Platform, [Visit Website](#)

Founded and launched a complete web service for helping people find lost objects. Features include geolocation services, real-time notifications, multi-language support, and advanced search filters. Full-stack development using React, Node.js, and MongoDB. Successfully deployed and currently active platform serving users.

- 2025 – **NRF24L01+ Performance & Security Analysis**, *Embedded Systems Security*  
 Present Analysis of NRF24L01+ transceiver performance and security vulnerabilities. Investigated 2.4GHz ISM band challenges, implemented jamming attacks and eavesdropping techniques. Evaluated countermeasures including software encryption and frequency hopping.
- April – July 2025 **Autonomous Vehicle Vision System**, *Computer Vision & Robotics*, [View on Google Drive](#)  
 Complete autonomous driving system using Raspberry Pi 4. Features: real-time lane detection, traffic sign recognition (traffic lights, stop signs, speed limits), obstacle detection, and multi-sensor data fusion. Achieved accuracy using OpenCV and Python.
- April – July 2025 **IoT Health Monitoring System**, *IoT and Sensor Technologies*, [View on LinkedIn](#)  
 Developed an embedded solution for vital parameters tracking using ESP32 and biometric sensors. Implemented secure data transmission to cloud dashboard with real-time monitoring capabilities.
- June – July 2025 **RAG Web Application**, *Deep Learning*, [View on GitHub](#)  
 Built a document-based Q&A application using MERN stack. Features include document upload, OpenAI API integration, and contextual response generation for intelligent document processing.
- June – July 2025 **RAG Android Application**, *Mobile Programming*, [View on GitHub](#)  
 Created native mobile application with Java implementing RAG functionality optimized for mobile devices with intuitive user interface and offline capabilities.

## Technical Skills

Programming Languages & Frameworks	Python (AI/ML Focus), C (Embedded Systems), C++, JavaScript, Java, Node.js, React, Vue.js, Express.js.
AI & Machine Learning	Deep Learning (CNN, RNN, LSTM, GRU), TensorFlow, Computer Vision, OpenCV, Natural Language Processing, TinyML, Model Optimization, RAG Systems, Data Analysis, Scikit-learn, Isolation Forest, Unsupervised Learning, Sensor Fusion.
IoT & Embedded Systems	ESP32, Arduino, Raspberry Pi 4, Microcontroller Programming, Circuit Design, IoT Protocols (MQTT), JSON, I2C, Linux Embedded & RTOS, Edge & Fog Computing.
Edge Computing & Data Engineering	Node-RED, InfluxDB, Grafana, Time-Series Databases, Data Visualization, Distributed Edge Architecture.
Databases & Cloud	MongoDB, MongoDB Atlas, Big Data Processing, MySQL.
Networking & Security	Network Protocols (TCP/IP), Advanced Computer Networks, Encryption & Security Protocols, Embedded Systems Security.
SoC & Parallel Computing	System-on-Chip (SoC) Design, Parallel Programming.
Mobile Development	Android Development, Android Studio.
MLOps & DevOps	Docker & Containerization, Apache Kafka & Streaming, MLflow, Model Deployment & Monitoring, Git/GitHub, VS Code, Postman.

## ██████ Languages

English	Fluent	<i>Read, Write, Speak</i>
Français	Medium	<i>Read, Write, Speak</i>
Arabic	Fluent	<i>Read, Write, Speak</i>

## ██████ Additional Information

Interests	Artificial Intelligence, IoT Systems, Embedded Programming, Computer Vision, Autonomous Systems
Availability	Open to internships, research opportunities, and collaborative projects in AI and embedded systems