

# OMAR BOUHLAL

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Tangier, Morocco

## Profile

Results oriented Software Engineer (EMSI Class of 2025) with a versatile technical background. Delivered a high-impact End of Studies Project (PFE) at Yazaki by engineering an SAP supervision solution (.NET, PostgreSQL, Grafana) that shifted monitoring from reactive to proactive. Experienced in AI-driven systems, including RAG chatbots using Python and Next.js, with solid DevOps foundations (Docker, system integration).

## Professional Experience

### YAZAKI

Tangier, Morocco

Mar 2025 – Jun 2025

- Built a modular and scalable SAP supervision platform using .NET (RFC) and PostgreSQL, performing ETL and data transformation by parsing SAP tables and logs for reliable data ingestion.
- Designed real-time dashboards with Grafana, enabling proactive incident detection; the solution is still in use today and continues to predict issues before they occur.
- Developed a Python Windows Service down-detector with SMTP alerts, preventing server outages and allowing the monitoring team to cut manual analysis time by half.
- Delivered a fully independent monitoring system, separate from SAP, allowing teams to access dashboards even when SAP is down; changing the workflow of the monitoring team from reactive to proactive.

### Tanger Med Port Authority

Tangier, Morocco

Jul 2024 – Aug 2024

- Developed an AI-powered RAG chatbot using Python, Ollama (local LLM), Next.js with ShadCn, and ChromaDB for vector-based document storage.
- Implemented OCR to parse documents such as invoices and contracts, enabling automated knowledge extraction.
- Built a secure FastAPI backend with JWT authentication, supporting document CRUD, embedding, and upload management, all running locally to prevent document leakage.
- Designed a frontend interface for seamless AI interaction and to manage all user-uploaded documents stored in ChromaDB.
- Automated access to internal documentation, significantly reducing employee lookup time and improving operational efficiency.

### GovRight

Tangier, Morocco

Jul 2023 – Aug 2023

- Created reusable UI components using Vue.js, improving scalability and responsiveness.
- Refactored legacy code to introduce reactivity and boost UX performance.
- Collaborated with backend teams for accurate API integration, coordinating via Slack and ClickUp for task management.
- Participated in daily Scrum meetings, contributing to sprint planning, task allocation, and team coordination.
- Learned and applied Git/GitHub workflows for collaborative version control within a team environment.

## Projects

### Personal Home Server (Homelab) (Proxmox / Docker)

- Designed and operated a personal homelab running on Proxmox for virtualization and service hosting.
- Linked the server to a custom domain using DDNS and configured secure routing with Nginx Reverse Proxy Manager.
- Gained hands-on experience in networking and cybersecurity, defending against malicious and bot traffic.
- Implemented full-stack monitoring using Loki and Grafana with real-time alerting.
- Deployed and managed containerized services using Portainer.

### ReplAi — AI Email Response Assistant (Next.js)

- Built an AI-powered assistant that generates contextual email replies from user prompts.

- Implemented authentication with **Clerk**, UI components with **shadcn/ui**, and LLM calls via **Google Gemini API**.
- Deployed the application using **GitHub** and **Vercel**.

#### Live Text-to-Speech Hand Gesture Translator

- Built a real-time sign language translation system converting hand gestures into text and speech.
- Used **TensorFlow**, **Scikit-learn**, **MediaPipe**, and **OpenCV** for gesture recognition and inference.
- Integrated **pyspellchecker** to correct predicted text and improve sentence coherence.
- Implemented text-to-speech output using **pyttsx3** for real-time audio feedback.
- Experimented with small local LLMs, including **Gemma (3B parameters)** and lighter models, to enhance contextual text generation.

#### Lunar Phases Calculator WebApp (*Python / React.js*)

- Designed a full-stack web application using **Django** as a REST API and **React.js** for the frontend.
- Computed and visualized lunar phases dynamically based on calendar inputs and current date-time.

#### Car Rental Management Website (*PHP*)

- Developed a full-stack rental management platform using **PHP**, **phpMyAdmin**, and **MySQL**.
- Implemented a responsive UI with **TailwindCSS** for reservation and fleet management.

#### AI Car Price Prediction Model (*Python*)

- Built a local machine learning model with **Random Forest Regression** to predict car prices using online up to date market data with an **accuracy of 90%**.
- Integrated the model into a user-friendly interface for real-time predictions.
- Tested many machine learning algorithms like **XGBoost**, many types of **Regression**.

#### Gym Inventory Management System (*C++*)

- Built a backend system and CLI tool to manage gym inventory and user subscriptions.
- Focused on data structures, file persistence, and efficient command-based operations.

#### Ultrasonic Radar Project (*Arduino*)

- Created an ultrasonic radar system using an Arduino board, servo motor, and distance sensors.
- Designed a basic user interface to visualize object detection in real time.

## Education

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### EMSI — Ecole Marocaine des Sciences de L'ingénieur (Tangier, Morocco)

*Engineering Degree in Computer Science and Networks (2020 – 2025)*

## Technical Skills

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**Languages:** Python, JavaScript, C#, C++, SQL, PHP

**Frameworks:** .NET / ASP.NET Core, React.js, Next.js, Django, Vue.js, Laravel, N8n

**DevOps & Tools:** Docker, CI/CD, Grafana, Ollama, Git, Linux

**Databases:** Pinecone, PostgreSQL, ChromaDB, MongoDB, Oracle, MySQL

## Certificates

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**React Native**

Meta, May 28, 2024

**React Basics**

Meta, Dec 28, 2023

**Machine Learning with Python**

IBM, Dec 27, 2024

**Introduction to Containers (Docker, Kubernetes & OpenShift)**

IBM, Dec 27, 2024

**Introduction to Java and OOP**

University of Pennsylvania, Jan 22, 2024

**Introduction to Git and GitHub**

Google, Dec 27, 2024

## Languages

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**Arabic:** Native   **English:** Professional (C1)   **French:** Professional (B2)

## Soft Skills

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Problem Solving, Fast Learner, Adaptability to New Challenges, Strong Time Management and Punctuality, Technical Communication