



EL HADRATI OTHMAN

DATA AND SOFTWARE ENGINEERING STUDENT

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SUMMARY

I am a second-year Data Engineering student at the National School of Applied Sciences in Al Hoceima (ENSAH). I'm passionate about data engineering , computer science and excited to apply my skills and knowledge to create innovative solutions.

PROJECTS

AI-POWERED PORTFOLIO CHATBOT

CREWAI / AGENTIC AI

- A sophisticated **chatbot API** designed to enhance **portfolio** interactions using **FastAPI** and **CrewAI**. It features a hierarchical multi-agent system, including specialized agents for retrieving GitHub repositories, providing project insights, managing user interactions, and sending emails. The chatbot ensures intelligent, context-aware conversations with advanced memory handling via **Mem0 AI**.
- Integrates **Google Gemini API** for AI-driven responses and **AgentOps** for system monitoring. Secure API design with CORS protection, session management, and Gmail SMTP for automated email communication.

AI CHATBOT FOR SMART CITY ASSISTANCE – AL HOCEIMA

LLAMAINDEX/ AGENTIC AI

- Developed an AI-powered chatbot for Al Hoceima using **FastAPI**, **LlamaIndex**, **LangChain**, and **Qdrant**, offering real-time information on tourist attractions, coffee shops, weather updates (via API), and duty pharmacy schedules (via web scraping). Implemented Pandas Query Engine for advanced service ranking and used MySQL for storing user chat history.
- Integrated features such as image/map rendering and image analysis for site recognition, with real-time monitoring via **LangTrace** to ensure performance reliability. Designed to provide intelligent, context-aware assistance for intuitive and engaging user experiences.

DARIJA SENTIMENT ANALYSIS PLATFORM

AWS/ MACHINE LEARNING

- A sentiment analysis platform tailored for **Darija** (Moroccan Arabic), featuring **FastAPI** for backend processing, **ReactJs** for an interactive web interface, and **DynamoDB** for feedback storage. It integrates a custom machine learning model optimized for Darija sentiment analysis by leveraging various **ML** and **DL** algorithms, including **fine-tuning** the Darija-BERT model for Darija. This enables real-time text analysis and YouTube comment sentiment evaluation.
- Leverages **Amazon S3** for model storage, facilitating **active learning** and supporting continuous model improvement to enhance accuracy and performance.

REAL-TIME ANOMALY DETECTION SYSTEM

KAFKA/ BIG DATA

- A real-time anomaly detection system for credit card transactions using **AWS services (EC2, DynamoDB)**, **KAFKA** for a real-time data streaming .
- Implementing an **Isolation Forest machine learning** model for effective anomaly detection and creating a **React** frontend for real-time transaction visualization.

MEDICALE OFFICE MANAGEMENT

FASTAPI & REACT / FULL-STACK

- Developed an admin dashboard using **React** with **Tailwind CSS** and **FastAPI** to manage patient records, appointments, and revenue tracking, enhancing operational efficiency.
- Implemented **JWT authentication** for secure access control and deployed the system using **Docker** containers, facilitating streamlined and scalable deployment across multiple environments.

EDUCATION

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| • Second-year Student in Data Engineering | 2023 - NOW |
| • Preparatory Cycle | 2021 - 2023 |
| • First year of Bachelor's degree | 2020 - 2021 |

ADDITIONAL INFORMATION

- **Technical Skills:**
 - **Programming Languages & Frameworks:**
 - Python (FastAPI , Flask), Java (Spring , Spring Boot), JavaScript (React), C
 - **Databases:**
 - SQL (PostgreSQL, MySQL, OracleDB), PL/SQL , MongoDB
 - **Operating Systems & Scripting:**
 - Linux, Windows, Bash scripting
 - **Artificial Intelligence:**
 - Machine Learning, Deep Learning, NLP , Generative Ai , Agentic Ai
 - **DevOps:**
 - Git, GitHub, Docker, AWS services
 - **Big Data:**
 - Spark , Hadoop , Hive , Sqoop
 - **Design & Modeling:**
 - Agile/Scrum, UML
- **Languages:**
 - **English:** Proficient
 - **French:** Proficient
- **Certifications & Badges:**
 - Over 10 certifications in Data and Computer Science from Oracle , Coursera, and others.
- **Skills:**
 - Problem Solving
 - Teamwork
 - Adaptability