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

ENSAH CHATBOT | RETRIEVAL AUGMENTED GENERATION   *LLM| LANGCHAIN| MONGODB*

- An **AI-powered conversational** assistant for ENSA Al-Hoceima, utilizing **Retrieval-Augmented Generation (RAG)** to provide academic and administrative information using **LangChain** FrameWork. Built with **FastAPI** and **LangServe** for backend processing, **Streamlit** for an interactive chat interface, and **QdrantDB** for efficient vector-based retrieval.
- Leverages Google Generative AI (**Gemini**) for natural language responses, a custom web scraping module for up-to-date information, and **MongoDB** for persistent chat history. **Docker** based deployment ensures scalability, while **LangSmith** monitors and optimizes performance.

DARIJA SENTIMENT ANALYSIS PLATFORM | NLP   *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-BART 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 | BIG DATA   *AWS SERVICES | KAFKA| PYTHON*

- 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.

SPOTIFY PIPELINE | AWS ECOSYSTEM   *AWS SERVICES | PYTHON*

- Building an automated data pipeline using **AWS services (Lambda, S3, RDS)** to extract, transform, and load **Spotify API** data on a weekly schedule, ensuring up-to-date data.
- Designed and implemented data visualization dashboards in **Amazon QuickSight**, leveraging **CloudWatch** to monitor and automate pipeline operations for continuous data refresh and insights.

MEDICALE OFFICE MANAGEMENT | FULL-STACK WEB APPLICATION   *FASTAPI | REACT | MYSQL | DOCKER*

- 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.

YOUTUBE DOWNLOADER | WEB APPLICATION   *FLASK | HTML | CSS | JAVASCRIPT*

- Creating a web application enabling users to download YouTube videos, Shorts, and Playlists in various formats by simply providing the video URL, enhancing user convenience.
- Designing a responsive and user-friendly interface with **HTML**, **CSS**, and **JavaScript**, and deployed the application online for easy access without the need for software installation.

EDUCATION

Second-year Student in Data Engineering   **2023 - NOW**

The National School of Applied Sciences in Al Hoceima (ENSAH)
- Acquisition of the fundamental theoretical and technical skills required for an engineer.

Preparatory Cycle   **2021 - 2023**

The National School of Applied Sciences in Al Hoceima (ENSAH)
- gaining foundational knowledge and skills in engineering, mathematics, and sciences to effectively transition into specialized studies in data engineering.

First year of Bachelor's degree   **2020 - 2021**

- Faculty of Sciences Ibn Tofail (FSK UIT)

ADDITIONAL INFORMATION

- **Technical Skills:**
  - **Programming Languages & Frameworks**:
    - Python (FastAPI , Flask), Java, 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 , Retrieval Augmented Generation
  - **DevOps:**
    - Git, GitHub, Docker, AWS services
  - **Big Data:**
    - 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, CodSoft and others.
- **Skills:**
  - Problem Solving
  - Teamwork
  - Adaptability