YOUSSEF ACHEHBOUNE

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- EDUCATION

Master in Advanced Machine Learning and Multimedia Intelligence *2024 – 2026*

Bachelor in Software Engineering *2021 – 2024*

EXPERIENCE

EnCoV - Data Scientist, Internship *02/2026 – 07/2026*

Project: Robust Radiomic Feature Learning using Deep Learning

- Applied data augmentation on 3D medical images using affine transformations (rotation, scaling, translation).
- Extracted radiomic features from medical images using ROI masks, and trained a ResNet model evaluated with R^2 score and MSE loss.
- Evaluated the trained model on an external dataset to measure generalization across different image acquisition conditions.

Tools: PyTorch, CNNs, ResNet, Transfer Learning, NumPy, SciPy.

3D SMART FACTORY - AI Engineer, Internship *07/2025 – 09/2025*

Project: AI-Based Recruitment and Cognitive Assessment System

- Designed end-to-end NLP pipelines for automated CV parsing, entity extraction, and candidate profile structuring.
- Prompt-engineered Gemini LLM to generate interview questions and evaluate candidate responses.
- Implementation of backend for NLP inference, LLM orchestration, and data storage layers.

Tools: Python, NLP, Gemini API, LangChain, FastAPI, Machine Learning.

PERSONAL PROJECTS

Document Question Answering with RAG and LLMs

- Developed a full RAG pipeline: document ingestion, chunking, embedding generation, and semantic indexing into a Qdrant vector database.
- Implemented a retrieval pipeline to query responses from indexed knowledge using LLMs.
- Containerized and deployed the application with Docker, automating build and deployment workflows.

Tools: FastAPI, LangChain, Gemini, Qdrant, Docker, CI/CD (GitHub Actions).

Fine-Tuning BERT for Email Spam Classification

- Collection and processing of multiple email datasets, normalizing structure and applying text cleaning pipelines to produce training dataset.
- Implemented an end-to-end fine-tuning pipeline for DistilBERT, covering tokenization, training loop, and hyperparameter configuration.

Tools: Python, DistilBERT, Hugging Face Transformers, PyTorch

Face Recognition with FaceNet

- Collected and cleaned a face dataset, building genuine and imposter pairs for training and evaluation.
- Using triplet loss function and training loop to better understand how FaceNet embeddings are learned.

- Evaluated the model using False Accept Rate (FAR) and ROC curve.
Tools: TensorFlow, FaceNet, OpenCV, NumPy.

SKILLS

Programming Languages and Frameworks

C, Python, Java, Solidity, PHP

Machine Learning & Deep Learning

Frameworks: Scikit-learn, PyTorch, Hugging Face, LangChain
MLOps - DevOps: Docker, Weights and Biases, CI/CD (GitHub Actions)

Data Analysis and Visualization

Pandas, NumPy, Matplotlib, Seaborn, PowerBI

Web Development

Frontend: HTML, CSS, JavaScript, React/Next.js, TailwindCSS
Backend: FastAPI, SQL (MySQL, Supabase)

Development Tools and Methodologies

Git, GitHub, Agile Methodologies (**Scrum**)

Languages

Arabic, French, English

Personal Qualities

Autonomous, Rigorous, Scientific curiosity

CERTIFICATIONS

Data Analysis with Python:

- Basics of data analysis with Python, including model creation and evaluation.

Python for Data Science and AI:

- Core Python skills including data structures, programming fundamentals, and basic data science libraries.

Machine Learning Specialization