

MOUAD ELBAZ

Data Engineer | AI Engineer | RAG & Machine Learning Developer

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PROFESSIONAL SUMMARY

Big Data & AI Graduate with hands-on experience building scalable ELT pipelines, RAG systems, machine learning models, and full-stack data applications. Skilled in Python, Airflow, dbt, PySpark, FastAPI, Docker, PostgreSQL, Qdrant, and modern ML workflows. Seeking a Data Engineering, AI Engineering, or Machine Learning internship/junior role.

PROFESSIONAL EXPERIENCE

Data Engineering & Machine Learning Intern (PFE) – Prefecture d'Agadir Ida-Outanane, Agadir Apr 2026 - Jul 2026
GitHub: github.com/moad-cod/operational-intelligence-platform

- Designed an asynchronous ELT pipeline using Medallion Architecture to consolidate 200,000+ records from GLPI ITSM, OCS Inventory, and security logs.
- Orchestrated workflows with Apache Airflow and modeled analytical layers with dbt across Bronze, Silver, and Gold data layers.
- Built a multilingual RAG system for enterprise IT support using BM25, dense vector search, Reciprocal Rank Fusion, Cross-Encoder re-ranking, and Groq API integration.
- Trained XGBoost ticket-triage and Isolation Forest hardware-anomaly models, achieving approximately 86% accuracy across both use cases.
- Exposed services through a FastAPI backend and Next.js dashboard for real-time incident tracking and KPI visualization.

Tools: Python, Apache Airflow, dbt, PySpark, Qdrant, FAISS, XGBoost, Scikit-learn, FastAPI, Next.js, Docker, Groq API

Developer Intern – Prefecture d'Agadir Ida-Outanane, Agadir Apr 2025 - Jun 2025

- Engineered a secure enterprise attendance management system with RBAC, multi-tier authentication, dynamic session management, and IP compliance analysis.
- Implemented structured audit logging for compliance verification and configured secure local networking to reduce data exposure.

Tools: Backend Security, RBAC, Authentication, Audit Logging, Network Security, Linux

PROJECTS

RAGForge – AI Knowledge & RAG Platform Personal Project
GitHub: github.com/moad-cod/RAGForge

- Built an end-to-end SaaS application for automated document ingestion, hybrid keyword/semantic search, metadata re-ranking, and contextual question answering.
- Architected relational and vector storage backends with PostgreSQL and Qdrant, then containerized the microservices cluster with Docker.

Tools: Python, FastAPI, PostgreSQL, Qdrant, Docker, RAG, LLMs

PlantGuard AI – Plant Disease Detection System Academic Project
GitHub: github.com/moad-cod/Plant-Disease-Classification-using-CNN

- Trained and benchmarked CNN, ResNet, and EfficientNet-B3 models across 38 disease categories on the 70,000+ image PlantVillage dataset, reaching approximately 99.7% F1-score.
- Combined supervised classification with MSP and GOAD out-of-distribution detection, then deployed the model as a Streamlit web app containerized with Docker.

Tools: Python, PyTorch, TorchVision, EfficientNet-B3, ResNet, CNN, GOAD, Streamlit, Docker

TECHNICAL SKILLS

Data Engineering: PySpark, Apache Spark, Apache Hadoop, ETL/ELT, Data Pipelines, Data Lakehouse, Medallion Architecture
Orchestration & Modeling: Apache Airflow, dbt, Data Modeling, Data Orchestration
Machine Learning & AI: RAG, Semantic Search, Scikit-learn, XGBoost, PyTorch, Machine Learning
Data & ML Libraries: Pandas, NumPy, SciPy
Databases & Vector Search: PostgreSQL, MySQL, Redis, Qdrant, FAISS
Backend & APIs: FastAPI, Spring Boot, REST API Development, Next.js
DevOps & Cloud: Docker, Linux, System Administration, Network Security, Oracle Cloud Infrastructure (OCI)
Programming Languages: Python, SQL, Java, Git

EDUCATION

Bachelor in Big Data – Universite Sultan Moulay Slimane, Morocco 2026
Technicien Specialise en Reseaux et Systemes – ISTA Agadir, Morocco 2023 - 2025
Baccalaureat Sciences Physiques – Lycee Qualifiant, Morocco 2022 - 2023

CERTIFICATIONS

Machine Learning Specialization (DeepLearning.AI) • Network Security (Cisco) • Developer & Cybersecurity Pathways (Microsoft Certified) • Introduction to Data Warehousing (365 Data Science)

LANGUAGES

Arabic: Native | French: Intermediate | English: Fluent