

Mhamed Garbaa

AI and Cloud Engineering Student

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Profile

Motivated engineering student specializing in **Artificial Intelligence** and **Cloud Computing**. Skilled in **MLOps** and **Generative AI**, with a focus on building scalable, reliable, and efficient intelligent systems. Passionate about innovation, collaboration, and applying AI to solve real-world challenges.

Professional Experience

AI Intern – Explainable AI for Financial Applications, Talan Tunisia

June 2025 – August 2025

- Designed and deployed a **Generative AI prototype for credit scoring**, integrating **LLMs (Mistral, Llama 3)** with explainability techniques (XAI) to enhance transparency and model trust.
- Built a **scalable, cloud-ready pipeline** integrating APIs, interactive dashboards, and model management via **MLflow** and **Docker**.
- Contributed to research on adapting large models into lighter, more efficient architectures.
- Implemented **MLOps best practices**: versioning, monitoring, automated testing, and CI/CD deployment.

Keywords: Generative AI, LLMs, Explainability (XAI), Cloud, Docker, MLflow, APIs, CI/CD, MLOps, Financial AI

AI Intern – Conversational and Multimodal AI, Talan Tunisia

July 2024 – August 2024

- Developed a **multimodal chatbot** combining RAG, SMfold for 3D protein prediction, and VR for immersive interaction.
- Applied **generative AI and intelligent search techniques** (vector search, embeddings, NLP) for contextual and reliable responses.
- Cloud integration, containerization with **Docker**, and performance optimization for industrial use.

Keywords: Conversational AI, Multimodality, RAG, NLP, Generative AI, FastAPI, Streamlit, Cloud, Docker, DevOps

Projects

Industrial ECG Analysis System [ECG App]

- Developed a **real medical use case** based on machine learning: ECG signal preprocessing, feature extraction, and patient classification using supervised models.
- Optimized and industrialized the ML pipeline for **deployment, scalability, and interpretability** (SHAP, LIME).
- Built a **modular architecture** with model performance monitoring.

Keywords: ECG, Medical AI, Signal Processing, Scikit-learn, SHAP, LIME, Docker, MLOps

Distraction Detection Agent [GitHub]

- Developed a **real-time vision system** monitoring driver gaze and phone use using CNN networks.
- Implemented an **optimized embedded pipeline** (OpenCV + TensorFlow Lite) for smooth edge execution.
- Evaluated models on performance and latency metrics for **edge computing deployment**.

Keywords: Computer Vision, CNN, Real-Time, TensorFlow Lite, OpenCV, Edge AI, Road Safety

MyBank Audit System [GitHub]

- Designed a **secure banking audit system** integrating logging, traceability, and RBAC access control.
- Built an **anomaly detection engine** using ML to identify suspicious transactions.
- Integrated a **conversational LLM assistant (Llama 3)** for contextual account supervision and report generation.
- Containerized with Docker and **cloud-ready deployment** via RESTful APIs.

Keywords: Django, REST APIs, LLM, Security, Anomaly Detection, Docker, SQLite, Cloud

Education

ENET'Com, National School of Electronics and Telecommunications of Sfax

2023 – Present

Keywords: AI, Cloud Computing (AWS), DevOps, Network Security, C, Java, Spring Boot, MySQL, Signal Processing, Matlab

IPEIN, Preparatory Institute for Engineering Studies of Nabeul

2022 – 2023

Keywords: Linear Algebra, Python, Advanced Problem Solving in Mathematics

ESSTHS, School of Science and Technology of Hammam Sousse

2021 – 2022

Technical Skills

- **Languages:** Python (NumPy, Pandas, Scikit-Learn, PyTorch, TensorFlow, MLFlow), PySpark, SQL, Bash
- **MLOps:** MLFlow, LangChain, FastAPI, Streamlit, Docker, Kubernetes, GitLab CI/CD, Jenkins, Weights & Biases (W&B)
- **Cloud:** AWS, GCP, Azure — Model deployment, monitoring, and scaling
- **Data Engineering:** ETL, Feature Store, Data Pipelines, Airflow, Kafka (basic knowledge)
- **AI and NLP:** Whisper, RAG, LLMs (Mistral, Llama3, FinMA), Classification, Summarization, XAI (SHAP, LIME, Captum)
- **Versioning & Collaboration:** Git, GitHub Actions, DVC

Certifications

- Microsoft AI Fundamentals (AI-900)
- Microsoft Azure Fundamentals (AZ-900)
- Machine Learning in Production – DeepLearning.ai
- MLOps Fundamentals – DataCamp

- Docker and Kubernetes – DataCamp
- Jenkins for CI/CD – KodeKloud
- Supervised Learning with Scikit-learn – DataCamp
- AWS Cloud Practitioner (in progress)

Competitions

- 3rd Place – NASA Space Apps Challenge
- 3rd Place – TomorrowLab (TPL / DAAD)

Associative Engagement

President – TUNSA Club

Vice President of Training and Development – JCI Korba

Skills: Leadership, Strategic Planning, Team Collaboration

Languages

Arabic: Native English: Professional French: Professional German: Elementary