

MOHAMED AMINE KOUKI

AI ENGINEER | FULL-STACK DEVELOPER

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PROFESSIONAL EXPERIENCES

AI Engineer

LLM-Powered Multi-Agent Automation System

Oct 2025 – Mar 2026 Hexagone SAS, Tunisia
Developed and deployed scalable AI systems for document automation and enterprise workflows using modular Python backends and intelligent AI agents.

- Built multi-agent workflows using LangGraph, LangChain, CrewAI, and MCP
- Designed and optimized RAG pipelines for intelligent document processing
- Integrated MCP tools into agent pipelines for structured tool execution
- Technologies:** Python, LangGraph, LangChain, CrewAI, MCP, RAG, Docker

Freelance AI Developer

RAG-Based Nutrition Recommendation System

Jul 2025 – Oct 2025 Remote, Tunisia
Developed an AI-powered nutrition recommendation system using Retrieval-Augmented Generation (RAG) to provide personalized meal planning and dietary guidance based on individual goals.

- Developed system calculating macros and tracking meals
- Integrated LLM for generating optimized meal suggestions
- Delivered end-to-end solution from data cleaning to deployment
- Technologies:** Python, RAG, LLM, Vector Database, Data Cleaning, Pandas

Final Year Project: AI Engineering Internship

Enhancing and Optimizing AI Performance Using CAG

Feb 2025 – Jul 2025 Hexagone SAS, Tunisia
Improved AI platform for scientific claim extraction via Cache-Augmented Generation (CAG), reducing latency and improving accuracy over traditional RAG.

- Improved memory utilization by 40% through advanced caching
- Reduced response time by 25% while boosting answer accuracy significantly
- Deployed optimized system in production, cutting costs by 30%
- Technologies:** Python, PyTorch, Pandas, CAG, RAG, KVCaching, BERTScore, CRISP-DM, Docker, Hugging Face Spaces, LLM, AI, Kaggle, Transformer

Laboratory Project: Advanced Image Classification

CNN-Based Date Fruit Classification Model

Nov 2024 – Dec 2024 ENICarthage, Tunisia
Developed a CNN-based image classification model, achieving **93% accuracy**. Conducted data diagnostics using MATLAB and matrix analysis, followed by systematic fine-tuning to optimize model performance under project constraints.

- Used MATLAB and matrix analysis to identify anomalies in the dataset
- Applied hierarchical tuning, regularization, and data augmentation
- Technologies:** TensorFlow, Keras, Python, Matplotlib, NumPy

PERSONAL PROJECTS

Management System for Final Year Projects

Developed a full-stack web application to manage project submissions, supervision workflows, and role-based access for students and faculty.

- Technologies:** Angular, Spring Boot, Spring Security, JWT, MySQL, API Trello, Spring Mail, Git, GitHub, Bootstrap

Creation of a Medical Management Application

Developed a secure web app for managing appointments and enhancing communication among patients, doctors, and administrators.

- Technologies:** Vue 3, Firebase, Firebase Hosting

SUMMARY

Passionate AI Engineer specializing in building intelligent systems and document automation solutions through LLM optimization and production-ready applications. Proven expertise in RAG pipelines, Cache-Augmented Generation, and multi-agent systems using LangGraph, LangChain, and CrewAI. Strong full-stack developer proficient in Python, Java, Spring Boot, PyTorch, and modern web frameworks. Seeking AI Engineer roles to drive innovation.

EDUCATION

Engineering Degree in Computer Science

National School of Engineers of Carthage
2022 – 2025 Chargaia 2, Tunisia

Pre-Engineering Cycle

Faculty of Sciences of Tunis (FST)
2020 – 2022 El Manar, Tunisia
• Ranked 180th out of 1380

CERTIFICATIONS

LLM & AI Agents

-Introduction to LangChain LangChain
-Building Reliable Agents LangChain

SKILLS

AI LLM Computer Vision Transformer

Machine Learning CAG RAG CNN

Multi-Agent Systems LangGraph

LangChain CrewAI MCP BERTScore

CRISP-DM PyTorch TensorFlow Keras

NumPy Matplotlib Pandas MySQL

PLSQL PostgreSQL SQLite Python

Java C C++ JavaScript HTML

CSS Angular Vue 3 Spring Boot

Flask Firebase Git GitHub Docker

IntelliJ VS Code Hugging Face Kaggle

LANGUAGES

Arabic	Native	●●●●●
English	Proficient	●●●●●
French	Advanced	●●●●●

ACTIVITIES

Pitch for Change 5.0 : Achieved 2nd place

Microsoft Club ENICarthage: Member

INTERESTS

Chess, Robotics and Gaming