



ALI MARZOUG

Address: 12 Rue Al Nasr, Abadla, Douz Chargui, Kebili, Tunisia

Phone: +216 20 190 055

Email: ali.marzoug15@gmail.com

LinkedIn: linkedin.com/in/ali-marzoug-b7a022209

SUMMARY

Data Science Engineer (ESPRIT graduate, 2026) who has acquired expertise in dealing with end-to-end development and machine learning processes as well as having experience in good-quality AI programs like LLM agents and RAG systems. He is dedicated to developing systems that combine usability, intelligence, and effectiveness. He is characterized by his teamwork nature, flexibility, and genuine interest in using AI to deal with current issues.

PROFESSIONAL EXPERIENCE

Full-Stack & AI Engineer – Final Year Internship (PFE)

Feb 2026 – Aug 2026

AI-Powered Physiotherapy Booking Platform

- Created and constructed a complete booking system to facilitate and ease the process for both patients and administrators using React 18, TypeScript, and Tailwind CSS.
- BConstructed a stable REST API using NestJS, Prisma, and PostgreSQL; used JSON Web Tokens for authentication, Redis caching, and WebSocket notifications and integrated paid versions of the tool.
- Ensured that there would be customer support in Arabic language, English language, and French language by constructing an AI assistant using FastAPI, LangChain, and LangGraph.
- Ensured that RAG algorithm has been performed by using ChromaDB and embedding tool GPT-3.5-turbo; built an automated machine that helps customers to utilize the services.
- Containerized application via Docker Compose which consisted of six services and functioned via an Nginx reverse proxy to deliver automated testing and development with the use of GitHub.
- Engaged in analyzing the project with Prometheus, Grafana, and Sentry debugging tool.

Data Science Intern – Graph Algorithms

Jul 2025 – Aug 2025

- Formulated and compared graph ranking algorithms (PageRank, HITS, and a Baseline model) to rank prerequisite nodes in academic course graphs.
- Applied evaluation metrics such as nDCG, Spearman correlation, Kendall Tau, execution time measurement, and overlap measurement to determine the performance of the algorithms.
- Designed an online application using React as frontend and FastAPI as backend to demonstrate the findings, scores and comparisons.
- Utilized Neo4j to visualize graphs and dependencies and performed graph image exporting for reports.
- Used JSON to process and structure the input data to enable compatibility among Google Colab, Neo4j and web application.
- Compiled practical knowledge of graph theory, data visualization, and assessment of ranking models based on machine learning techniques.

MarketMind – AI Marketing Assistant for SMEs

Jan 2025 – May 2025

- Chosen as one of the best Data Science initiatives at ESPRIT for Bal of Projects 2025.
- Created a complete AI system for marketing campaign content automation.
- Designed a Multimodal Agentic RAG model that provides image, text, or audio per prompts.
- Fine-tuned Stable Diffusion XL (SDXL) with LoRA for visual content in line with the brand's identity.
- Established multilingual sentiment analysis via BERT/ TunBERT and SBERT embeddings.
- Built Power BI BI panels for analyzing campaign productivity and audience engagement.
- Merged FastAPI with React while ensuring user authentication.
- Launched recommendation systems and time series prediction for effective campaign strategy formulation.

E-Commerce Platform – Online Food Store

Jul 2024 – Aug 2024

- Created user-friendly e-commerce experience by identifying requirements for cart features, session use, and order placement logic.
- Improved back-end architecture in order to make online shopping experience easier by using Express.js.
- Installed session-based user authentication and authorization mechanism in order to make shopping experience secure.
- Led the team in the development of UI improvements in order to improve usability and simplify purchases.

Web Development Intern

Jul 2023

- Created a fully functional online food store from scratch in terms of user authorization, cart implementation, and session management.
- Created a back-end services by using Node.js and PostgreSQL.
- Implemented responsive design (using Bootstrap) and improved overall consistency of the UI.
- Utilized GitHub for source control purposes and issue tracking.

Taskify Clone – Todo App with User Authentication

Aug 2022

- Developed a task management system using React.js and Node.js.
- Organized secure CRUD operations and user login/logout.
- Applied modern UI with responsive design and used GitHub for collaboration.

EDUCATION

- **Engineering Degree in Data Science (in progress)** **Sep 2023 - 2026**
ESPRIT, Ariana – Tunisia
- **Preparatory Classes (MPI)** **Sep 2020 - May 2023**
Higher Institute of Computer Science and Multimedia, Sfax
- **High School Diploma – Experimental Sciences** **Jul 2020**
Douz High School
Final Average: 12.92 / 20

TECHNICAL SKILLS

- **Languages & Frameworks:** Python, Java, C, JavaScript, PHP, HTML/CSS, React.js, Node.js, Symfony, SQL, PLSQL, TypeScript, NestJS
- **Platforms & Tools:** GitHub, FastAPI, PostgreSQL, MongoDB, Neo4j, NoSQL, Bootstrap, Tailwind, Linux, Power BI , Kafka, Docker, Prisma, Redis, Docker Compose, Nginx, GitHub Actions, Prometheus, Grafana, Sentry, Swagger, Stripe
- **Design & AI:** Adobe Photoshop, Illustrator, UI/UX Design, SDXL + LoRA, BERT, TunBERT
- **AI Domains:** Multimodal AI, Recommendation Systems, NLP, Time Series Forecasting, Sentiment Analysis, RAG, LangChain, LangGraph, LLM Agents, Prompt Engineering, Conversational AI

CERTIFICATES

- Adobe Photoshop
- Adobe Illustrator
- **NVIDIA** - Fundamentals of Deep Learning
- **NVIDIA** - Applications of AI for Anomaly Detection
- **NVIDIA** - Building Transformer-Based Natural Language Processing Applications
- **Coursera DeepLearning.AI** - Convolutional Neural Networks
- **Hashgraph Developer Course** – The Hashgraph Association / Hedera

LANGUAGES

- **Arabic:** Native
- **French:** Conversational
- **English:** Conversational

INTERESTS

Football • Gaming • AI & Generative Tech • Creative Projects • Traveling