ALI MARZOUG

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SUMMARY

Data Science engineering student at ESPRIT with practical experience in full-stack development, machine learning workflows, and AI-powered applications. Passionate about building solutions that balance usability, intelligence, and performance. Recognized for a collaborative mindset, adaptability, and a strong interest in applying AI to solve real-world challenges.

PROFESSIONAL EXPERIENCE

Data Science Intern – Graph Algorithms   Jul 2025 – Aug 2025

- Developed and compared graph-based ranking algorithms (PageRank, HITS, and a Baseline model) to prioritize prerequisite nodes in academic course graphs.
- Implemented evaluation metrics such as nDCG, Spearman correlation, Kendall Tau, runtime analysis, and overlap measures for performance assessment.
- Built a web interface using React (frontend) and FastAPI (backend) to display results, scores and comparison tables.
- Used Neo4j to visualize graphs and relationships; exported graph images for reports and UI.
- Processed and structured input data using JSON files to ensure interoperability between Google Colab, Neo4j, and the web application.
- Gained hands-on experience in graph theory, data visualization, and evaluation of machine learning–inspired ranking models.

MarketMind – AI Marketing Assistant for SMEs   Jan 2025 – May 2025

- Selected for Bal of Projects 2025 as one of the top Data Science projects at ESPRIT.
- Built a full-stack AI solution to automate content generation for marketing campaigns.
- Developed a Multimodal Agentic RAG system capable of returning image, text, or audio based on prompt intent.
- Fine-tuned Stable Diffusion XL (SDXL) with LoRA to generate brand-aligned visual content.
- Implemented multilingual sentiment analysis using BERT/TunBERT and SBERT embeddings.
- Created BI dashboards in Power BI to track campaign performance and audience engagement.
- Integrated FastAPI and React with secure user authentication and admin controls.
- Deployed recommendation engines and time series forecasting for strategic campaign planning.

E-Commerce Platform – Online Food Store   Jul 2024 – Aug 2024

- Developed user-friendly e-commerce experience with cart, session, and order processing logic.
- Enhanced backend architecture for checkout flow and product handling using Express.js.
- Applied session-based authentication and authorization for a secure experience.
- Led UI improvements to enhance usability and streamline purchasing.

Web Development Intern   **Jul 2023**
- Developed a complete online food store with user authentication, cart functionality, and session management.
- Designed and implemented backend services using Node.js and PostgreSQL.
- Applied responsive design using Bootstrap and improved UI consistency.
- Used GitHub for source control, issue tracking, and team collaboration.

Taskify Clone – Todo App with User Authentication   **Aug 2022**
- Built a task management system using React.js, Node.js, and PostgreSQL.
- Supported secure CRUD operations and user login/logout functionality.
- Applied modern UI with responsive design and GitHub-based collaboration.

EDUCATION

- **Engineering Degree in Data Science (in progress)**   **Sep 2023 - Present**
  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
- **Platforms & Tools:** GitHub, FastAPI, PostgreSQL, MongoDB, Neo4j, NoSQL, Bootstrap, Tailwind, Linux, Power BI , Kafka, Docker
- **Design & AI:** Adobe Photoshop, Illustrator, UI/UX Design, SDXL + LoRA, BERT, TunBERT
- **AI Domains:** Multimodal AI, Recommendation Systems, NLP, Time Series Forecasting, Sentiment Analysis

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