

MOHAMED MELEK JEMAI

Data Science & AI Engineering Student • Seeking a 6-month end-of-studies internship from January 2027

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PROFILE

Final-year engineering student (Master's level) in Data Science at ESPRIT. I build machine learning and AI systems on real data: NLP, sentiment analysis, anomaly detection, LLMs, RAG and multi-agent architectures, and take them to production with data pipelines, APIs, dashboards and validation guardrails. Trained in statistics and time-series analysis. Led a 5-person AI project team. 2nd place at the TSYP 13 national competition (IEEE).

SKILLS

- **Data Science & ML:** Python, SQL, R, machine learning, deep learning, NLP, sentiment analysis, anomaly detection, data modelling
- **Statistics:** probability & statistics, time-series analysis (ACF/PACF, ARMA)
- **Generative AI:** LLMs, RAG, multi-agent systems, prompt engineering, guardrails, ChromaDB, Ollama, Groq API
- **Data & Engineering:** data pipelines, OCR (PaddleOCR), FastAPI, NestJS, PostgreSQL, MongoDB, Docker, Git, microservices
- **Visualization:** dashboards, automated PDF reports, Next.js, React, TypeScript
- **Languages:** Arabic (native), French (B2), English (B2)

EXPERIENCE

Data Science & AI Intern – Fatoora, multi-tenant SaaS invoicing platform | 2026 – present

- Designed an invoice data-processing pipeline (PaddleOCR microservice + LLM validation layer), raising extraction quality from an internal score of ~4/10 to 9/10.
- Built invoice anomaly detection for automated monitoring of financial data.
- Automated expense categorization with LLMs, with guardrails preventing incorrect figures in generated text.
- Built a financial analytics dashboard and AI-generated reports with PDF export.
- Found and fixed a parsing bug that silently dropped every amount above 1,000 TND; fixed 9 blocking issues in a pre-production security audit.

Development & AI Intern – Jet Cabin Essentials Hub, Toulon, France | Jul 2025 – Sep 2025

- Designed an AI model that automatically generates interior design proposals.
- Built the company's professional website and mobile app.

PROJECTS

FX-AlphaLab – AI multi-agent framework for forex analysis (ESPRIT integrated project, team of 5) | 2026

- Project Manager: planned and coordinated the work of a 5-person team through the full development cycle.
- Developed the Sentiment Analysis Agent: NLP and machine learning on financial news, market sentiment and economic events to generate trading signals.
- Multi-agent architecture combining technical, macroeconomic & geopolitical, correlation and sentiment agents, with signal aggregation, conflict resolution between agents and explainable, real-time insights in dashboards.

Tunisian AI Government Assistant – natural-language interface (RAG) | 2025

- Built an assistant answering in natural language from administrative documents: indexing (ChromaDB), semantic search, local LLM (Ollama), FastAPI, NestJS and Next.js microservices.

PINE JARVIS – multimodal AI assistant | 2025

- Python assistant routing across 3 LLMs, with speech recognition (Whisper) and camera vision (MediaPipe).

EDUCATION

Engineering degree in Computer Science, Data Science track (Master's level) – ESPRIT, Tunisia | 2022 – 2027

Coursework: probability & statistics, time-series analysis, advanced machine learning.

AWARDS

- TSYP 13 (IEEE) – 2nd place, national student project competition.
- ESPRIT Bal des Projets – participant in 2 editions.