

# Souissi Majd

Engineering Student in Artificial Intelligence

*Seeking a 6-month final-year internship starting February 2026*

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## PROFESSIONAL EXPERIENCE

### AI Research Intern

Aug 2025 – Sep 2025

Sfax, Tunisia

*Data Engineering and Semantic Research Unit, Faculty of Sciences*

#### **Vision–Language Models for Video Captioning and Semantic Retrieval**

- Study and implementation of **state-of-the-art VLMs** for video captioning and semantic retrieval.
- Evaluation of a **multimodal retrieval pipeline**, testing multiple models such as **Qwen-VL 2.5** and **InternVL**.
- Performance analysis and writing of a **detailed research report** presenting comparative results.
- **Keywords:** Multimodal retrieval, Vision–Language, RAG, FAISS, Kafka, Python

### AI Research Intern

Jun 2025 – Aug 2025

Ben Arous, Tunisia

*Larina Research Laboratory for Intelligent Networks and Nanotechnology*

#### **Explainable CNNs for Agricultural Image Classification**

- Development of an **explainable CNN** for almond shell classification, interpretable via **Grad-CAM** and **LIME**.
- Integration of the model into a **Flutter mobile application** for real-time classification.
- **Publication & presentation:** Paper accepted at the international conference *OCTA'2025 Multi-Conference, "Improving Almond Variety Identification through Wavelet-Based Image Augmentation"*, November 2025.
- **Keywords:** XAI, CNN, Grad-CAM, LIME, Flutter

## EDUCATION

### Higher National Engineering School of Tunis (ENSIT)

Tunis, Tunisia

*Research Master in Data Science (M2)*

Sep 2025 – Sep 2026

*Engineering in Applied Mathematics and Modeling*

Sep 2023 – Sep 2026

### Preparatory Institute for Engineering Studies of Sfax (IPEIS)

*Preparatory Cycle, Physics and Chemistry*

Sfax, Tunisia

### Sadok Feki High School

*Baccalaureate in Mathematics (Honors)*

Sfax, Tunisia

Sep 2020 – Jul 2021

## EXTRACURRICULAR ACTIVITIES

- **Media Manager** of the **Vanguard Chess ENSIT Club** and **Marketing Manager** of the **Nerdata ENSIT Club**
- 6<sup>th</sup> place at **GeeksHack 4.0**, 14<sup>th</sup> at **Codentine** and 1<sup>st</sup> place in one of the **DataQuest (AI hackathon)** competitions.

## ACADEMIC PROJECTS

### **PneumoXAI: Interpretable Analysis of Chest X-rays**

- Design of a **CNN** for pneumonia detection on chest X-rays, with interpretability via **Grad-CAM** and **LIME**.
- Development of a **data augmentation pipeline** including **SMOTE** for class balancing.
- Creation of a **Flask web application** with a **LangChain chatbot** for medical predictions and interpretations.
- **Keywords:** CNN, Grad-CAM, LIME, SMOTE, Flask, LangChain, XAI

### **PodSum: Intelligent Podcast Summarization**

- Development of a pipeline combining **Whisper** for audio transcription and **Qwen LLM** for summary generation.
- Implementation of a **RAG module** enabling user–content interaction.
- Evaluation of the pipeline’s performance in terms of accuracy and relevance on multiple datasets.
- **Keywords:** Whisper, BERT, Qwen LLM, NLP, RAG (LangChain, FAISS)

### **AutoCoverLetterRAG – Automated Motivation Letter Generator**

- Built a full-stack **React.js + Node.js** web application that generates motivation letters from a user’s CV and job description.
- Designed a **RAG pipeline** combining document parsing, embeddings, and retrieval to link candidate skills to role requirements.
- Automated LaTeX compilation to produce clean, professional **PDF motivation letters** with dynamic content generation.
- **Keywords:** React.js, Node.js, LangChain, RAG, FAISS, LLMs, LaTeX, PDF generation

## SKILLS

**AI & Deep Learning:** PyTorch, TensorFlow, Keras, Hugging Face, LangChain, NVIDIA NeMo/NIM, OpenCV, U-Net, ViT, CLIP, Qwen-VL, LLMs, RAG, BERT, LSTM, XAI (LIME, SHAP, Grad-CAM), Scikit-learn, XGBoost, Librosa, FFmpeg

**Mathematics & Optimization:** Linear Algebra, Probability, Stochastic Processes, Time Series (ARIMA, Prophet), Genetic Algorithms, Linear Programming, Operations Research, Supply Chain Optimization

**Development & MLOps:** Python, C/C++, Java (JEE), Dart (Flutter), Flask, FastAPI, Docker, ONNX, Git, GitHub, CI/CD

**Data & Databases:** SQL, PL/SQL, MySQL, MongoDB, Oracle DB, FAISS, Chroma, Kafka, Power BI, Tableau, IBM SPSS, Seaborn, Matplotlib

**Languages:** Arabic (Native), English (930 TOEIC), French (Fluent)

## CERTIFICATES

**AWS:** Machine Learning Foundations    **DataCamp:** Data Scientist Associate

**NVIDIA:** Deep Learning Fundamentals, Computer Vision for Industrial Inspection, Generative AI with Diffusion Models, Rapid Application Development With LLMs

**HuggingFace:** AI Agents Fundamentals    **Microsoft:** Azure AI Fundamentals (AI-900), Azure Data Fundamentals (DP-900)