

AMINE ZAIRI

DATA SCIENCE ENGINEER

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PROFESSIONAL SUMMARY

Data Science Engineer passionate about designing scalable, production-oriented artificial intelligence solutions. Expertise in RAG systems, semantic search, NLP, computer vision, and microservices architectures, with hands-on experience deploying end-to-end — from modeling to production via Docker. Proven ability to turn business needs into robust, high-performing AI applications.

TECHNICAL SKILLS

Languages: Python, TypeScript, JavaScript, SQL

Machine Learning & AI: TensorFlow, PyTorch, BERT, CNN, Autoencoders, FAISS, sentence-transformers, MediaPipe, RAG, NLP, LoRA / PEFT

Backend Development: FastAPI, Node.js, REST APIs

Frontend Development: React, Next.js, React Native, Vite, HTML5, CSS3, Three.js

Databases & Storage: PostgreSQL, MongoDB, Oracle, MinIO (S3-compatible)

DevOps & Tools: Docker, Docker Compose, Git, Redis, RQ, CI/CD

Data Processing: OCR (pytesseract), poppler-utils, pandas, extraction pipelines

PROFESSIONAL EXPERIENCE

AI Engineer — Final-Year Project (PFE)

February 2026 – June 2026

Tradrly, Mahdia, Tunisia

- Designed and developed BridgeSign, a real-time French Sign Language (LSF) recognition web platform.
- Built a proprietary dataset of 4,983 videos (261 signs) and trained an Inception-1D model achieving 77.79% Top-1 accuracy.
- Developed a 3D avatar to render signs using MediaPipe and Three.js for real-time visual interpretation.
- Deployed the application via Docker for production use.
- Stack:** Python, TensorFlow, MediaPipe, Three.js, React, Next.js, Docker.

Software Development Intern

July 2025 – August 2025

Tradrly, Mahdia, Tunisia

- Designed and deployed Text Miner RAG, a production-ready RAG system combining semantic search, document processing, and optional LLM-based generation.
- Developed an asynchronous document-processing pipeline with intelligent extraction and search optimization.
- Set up a FAISS vector index with sentence-transformers embeddings and metadata management.
- Deployed a microservices architecture via Docker Compose (backend, frontend, database, object storage, task queue, workers).
- Developed REST APIs for ingestion, indexing, and search with full error handling and logging.
- Stack:** Python, FastAPI, React + Vite, FAISS, sentence-transformers, PostgreSQL, MinIO, Redis/RQ, Docker Compose.

IT Manager

July 2019 – May 2022

Iberostar Royal Mansour, Mahdia, Tunisia

- Ensured software and hardware maintenance of the IT infrastructure.
- Managed technical incidents and optimized existing systems.

Computer Science Teacher

September 2017 – June 2019

Lycée Ibn Rachik, Mahdia, Tunisia

- Taught programming fundamentals, algorithms, and software development.

Network Technician

July 2013 – June 2017

Hôtel Mahdia Palace, Mahdia, Tunisia

- Managed the installation and maintenance of IT equipment (workstations, peripherals) and network infrastructure.

Cashier

June 2011 – May 2013

Hôtel Nour Palace, Mahdia, Tunisia

SELECTED PROJECTS

Violence Detection Platform

March 2025 – May 2025

Academic Project

- Developed a content moderation platform using BERT and CNN for text, images, and video.
- Stack:** TensorFlow, BERT, CNN, React, Node.js, MongoDB.

Voice Emotion Detection System

May 2025

Academic Project

- Designed a CNN + Autoencoder model for vocal emotion analysis.

Sahel Metro Tracking System

May 2024

Academic Project

- Developed a real-time web application for metro tracking and arrival-time estimation.

E-commerce Platform (mecool.tn)

Freelance

- Developed a complete online store, from backend architecture to deployment.
- Stack:** Next.js, Prisma, PostgreSQL.

Showcase Website (almansurin-smm.tn)

Freelance

- Created a responsive professional website for an industrial company.
- Stack:** WordPress.

EDUCATION

Computer Engineering, Data Science & Artificial Intelligence

Sept. 2023 – June 2026

École Supérieure Privée d'Ingénierie de Monastir (ESPRIM)

- Engineering degree obtained June 2026.

Bachelor's Degree in Computer Networks

Obtained June 2010

École Nationale d'Ingénieurs de Carthage (ENICarthage)

CERTIFICATIONS

Building Transformer-Based Natural Language Processing Applications

November 2025

NVIDIA — Certificate of Competency

Fundamentals of Deep Learning

February 2024

NVIDIA — Certificate of Competency

LANGUAGES

Arabic: Native language

French: Fluent

English: Fluent