

SILMI Hadjer

Boumerdes, Algeria — phone number : 0549586766 — hadjersilmi28@gmail.com — LinkedIn — GitHub

Professional Summary

5th-year Software Engineering student, final year (State Engineer degree, graduate in 2027) with hands-on experience building distributed systems, full-stack web applications, and AI integrations. Led backend architecture and AI microservices on a fraud detection platform with NestJS, FastAPI, PostgreSQL, and RabbitMQ. Strong across the stack — from system design and microservices to ML/DL model integration and CI/CD pipelines.

Technical Skills

Architecture: Microservices, Distributed Systems, Monolithic, Event-Driven, REST APIs, RBAC, Authentication Systems

Backend: Node.js, Express.js, NestJS, Django, FastAPI, Java, Python

Frontend: React.js, Next.js, Tailwind CSS, HTML5, CSS3

Databases: PostgreSQL, MySQL, MongoDB, Redis, Neo4j, SQLite — SQL & NoSQL, ORM (Prisma, Mongoose)

AI / ML: Decision Trees, Random Forest, KNN, K-Means, Linear/Logistic Regression

Deep Learning: ANN, CNN, RNN, LSTM, BiLSTM, BERT, Transformers, LLM Fine-tuning

NLP & LLM: LangChain, RAG Pipelines, Vector Databases (FAISS), Chatbot Development, Computer Vision (YOLOv8)

AI Libraries: NumPy, Pandas, Scikit-learn, TensorFlow, Keras, PyTorch

DevOps & Tools: Docker, Git, GitHub, RabbitMQ, Consul, Traefik, n8n, Postman, Jest, Jira

Methodology: Agile/Scrum, CI/CD, Test-Driven Development

Professional Experience

Data Science Trainee – DSIP4 (Data Science Immersion Program)

june 2026 – present

Djezzy and MajestEYE

dar el beida, Algeria

- Participating in an intensive industry-grade data science program co-organized by MajestEYE and Djezzy.
- Working in a team on a real-world retail analytics project focused on out-of-stock detection and Point de Vente (PDV) segmentation, applying clustering and stockout prediction models on production data

AI & Backend Developer Intern

May 2025 – Jul 2025

Expert Petroleum Services

Boumerdes, Algeria

- Built and maintained RESTful APIs using Node.js, Express.js, and MongoDB with secure JWT authentication and role-based access control (RBAC).
- Designed and deployed a multilingual RAG chatbot (English, French, Arabic) using LangChain, FAISS, and local LLMs (LLaMA 3.2, Mistral 7B) via Ollama, grounded on internal company documents.
- Implemented a feedback loop with automatic retraining trigger and a full test suite for the chatbot pipeline.

Software Engineering Intern

Dec 2024 – Jan 2025

Sonatrach

Boumerdes, Algeria

- Studied enterprise DBMS architecture, network infrastructure, and cybersecurity practices in a large-scale industrial environment.
- Analyzed Internet services, help desk workflows, and IT operational systems.

Projects

Taamine – Industrial Insurance Fraud Detection Platform

2026

NestJS, FastAPI, React.js, PostgreSQL, Redis, RabbitMQ, MinIO, Docker, n8n, YOLOv8, BERT, XGBoost, LSTM

- **Team Lead** in a group of 5 — architected and led development of a full-stack fraud detection platform; personally responsible for 100% of backend, DevOps, n8n automation, and computer vision components.
- Designed a NestJS backend with PostgreSQL/Prisma, Redis caching, RabbitMQ event bus, and MinIO file storage; implemented JWT authentication with multi-role RBAC.
- Built 4 AI microservices in FastAPI: Isolation Forest/LSTM for anomaly detection, XGBoost for fraud classification, multilingual BERT for NLP claim analysis, and YOLOv8+ELA for computer vision damage assessment.
- Automated investigator workflows using n8n: built pipelines for auto-approval and auto-rejection PDF generation triggered by decision events, with MinIO storage integration.
- Containerized the full system with Docker Compose and managed CI/CD pipeline via GitHub Actions.

RAG Chatbot – Expert Petroleum Services

2025

LangChain, FAISS, FastAPI, React/Vite, Ollama, SentenceTransformers

- Built a production multilingual RAG chatbot grounded on company PDFs with automatic language detection, session memory, and per-query source attribution.

- Implemented SentenceTransformer embeddings (MiniLM-L6-v2), FAISS vector search, and a feedback loop that triggers automatic retraining after 3 consecutive negative ratings.
- Exposed chatbot via FastAPI REST API; built a responsive React/Vite frontend with Tailwind CSS.

TaxiBook – Distributed Microservices Booking System

2025

Django REST Framework, React/Vite, RabbitMQ, Traefik, Consul, Python

- Built and deployed a real-time taxi booking platform across 4 physical machines with dynamic service discovery via Consul and API gateway routing via Traefik.
- Designed an event-driven ride-matching pipeline: passenger requests published to RabbitMQ queues and consumed asynchronously by a Python matcher worker for driver assignment.
- Handled multi-machine network coordination including load balancing, CORS, and graceful service registration/deregistration.

Sentiment Analysis – BERT Fine-Tuning

2025

PyTorch, BERT, Express.js, React.js

- Fine-tuned bert-base-uncased (110M parameters) on the Twitter Airline Sentiment dataset, achieving 90.98% test accuracy for 3-class sentiment classification.
- Designed a custom classification head (3 dense layers: 512 to 256 to 128 neurons) with dropout, trained with AdamW optimizer and linear warmup over 12 epochs.
- Deployed via Express.js REST API bridge and built a responsive frontend for real-time inference with per-class confidence scores.

Education

Engineering Degree in Computer Science – Software Engineering

Expected 2027

University of Boumerdes (UMBB)

Algeria

- Specialization in software architecture, AI/ML integration, distributed systems, and full-stack development.
- Final-year project: AI-powered industrial insurance fraud detection platform (Taamine) – graded 17/20.

Certifications

- **Oracle Cloud Infrastructure 2025 AI Foundations Associate** – Oracle (Artificial Intelligence, ML, Deep Learning, Generative AI)
- **React.js Bootcamp** – DevUp (React.js, Tailwind CSS)

Languages

Arabic: Native **French:** B1 **English:** B2