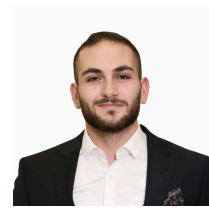


# Joseph Elias Al Khoury Artificial Intelligence Engineer

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🔗 <https://joseph-elias.github.io/Portfolio-joseph/>



## Profile

AI Engineer with experience in data science, machine learning, and Python development. I design and deploy models for heterogeneous data, including images, text, time series, and tabular datasets, and build robust, reproducible pipelines using tools such as Docker and Git. Interested in applying AI across diverse domains, with a focus on solving complex real-world problems through scalable and efficient machine learning systems. Seeking AI/ML roles in innovative and interdisciplinary environments.

## Professional Experience

**AI Engineer & Co-founder, SISSI** (AI-powered executive assistant, SaaS) 01/2026 – Present  
France

- Designed LLM pipelines for automatic note structuring (summarization, extraction, prioritization)
- Implemented a semantic search system (embeddings, pgvector)
- Developed an ingestion and enrichment pipeline (raw data → embeddings → insights)
- Integrated AI modules into a React / Django REST / Supabase architecture

**Master's (M2) apprenticeship: Data Scientist in Medical Imaging, Institut Curie** (U1288 Inserm) 09/2024 – 09/2025  
Orsay, France

- Designed and trained a survival prediction model for lung cancer using multimodal data, analyzing 180+ patients (MRI/PET/clinical).
- Discovered, defined, and validated new radiomic features, now integrated into LIFEx (open-source radiomics software).
- Scientific manuscript currently in preparation.

**Master's (M1) internship in Artificial Intelligence, Institut Curie** (U1288 Inserm) 03/2024 – 08/2024  
Orsay, France

- Rebuilt and optimized a radiomics extraction pipeline on brain MRI (hWS standardization, FLIRT registration, N4ITK correction).
- Reduced execution time through multi-CPU parallelization and pipeline restructuring (40% runtime reduction).
- Developed a Docker image ensuring standardized, portable, and reproducible execution across the laboratory.
- Developed predictive models for genomic mutations (H3.3, TP53).

## Academic Projects

**Multimodal time-series classification (CNN, LSTM, XGBoost)** 02/2025 – 03/2025  
Developed an early prediction system for type 2 diabetes using multivariate temporal data (77 biomarkers over 12 months).

**Lebanese Legal Chatbot (RAG, SBERT, Gemini, FastAPI, React)** 11/2024 – 01/2025  
Developed an intelligent legal assistant capable of answering Lebanese law questions in Arabic using a RAG architecture.

**Analysis and optimization of the Adult Emergency Department (SUA) logistics chain – Lille University Hospital** 09/2023 – 03/2024  
Optimized patient flow in the adult emergency department at Lille University Hospital (real-world data, scheduling, prediction, MAS, IoT).

## Education

**Master's in Engineering –Artificial Intelligence in Healthcare – High Honors (16/20)** 09/2023 – 09/2025  
Lille, France  
Program completed jointly at École Centrale de Lille and the University of Lille.

**Bachelor's degree in Biomedical Engineering, Lebanese International University (LIU) – High Honors** 01/2020 – 06/2023  
Koura, Lebanon  
Compétences en électronique, microcontrôleurs, traitement des signaux, systèmes électromécaniques et robotique appliquée au médical.

## Skills

**MLOps & Deployment:** FastAPI, Docker, Streamlit, Gradio, Elasticsearch (vector-based retrieval), Git, Linux shell, MLflow

**Data & Experimentation:** Data preprocessing, Feature engineering, Model evaluation, Hyperparameter tuning, Benchmarking, Reproducibility studies, NumPy, Pandas, scikit-learn, Matplotlib, Seaborn, Spark, Power BI, Data fusion, Medical imaging, Optimization algorithms

**Programming Languages:** Python, Java, C, SystemVerilog, MATLAB, R, SQL

**Machine Learning & AI Methods:** Supervised & unsupervised learning, Regression & classification, Retrieval-Augmented Generation (RAG), LLMs & prompt engineering, Large-scale data analysis, NLP, Deep learning (PyTorch, TensorFlow), Ontologies, Fuzzy logic

**Software & Tools:** Visual Studio Code, LabView, GitHub, GitLab, SPARQL, HTML, CSS, SysML/UML

## Languages

**Arabic** (Native) • **English** (C1) • **French** (C1)