SAMI KOUZEIHA

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PROFILE

AI Engineer with a **dual engineering degree** from **Télécom Paris–IP Paris** and the **Lebanese University**, specialized in Artificial Intelligence and Generative AI, with experience developing AI solutions and optimizing machine learning systems.

PROFESSIONAL EXPERIENCE

Ekimetrics France (Data & AI Consulting Firm) | ***Paris, France***
Machine Learning Engineer | *April 2025 – October 2025*

- **Environmental RAG System:** Contributed to the design and implementation of an end-to-end RAG pipeline for a leading client, including document ingestion (web scraping/OCR) with semantic chunking to preserve context. Optimized a hybrid **retrieval** engine (dense **embeddings** via **Qdrant Vector Database** + **BM25**) and integrated an **LLM-based reranking** module to enhance response reliability.
- Conducted LLM red-teaming and security testing using **DeepTeam** and implemented safety safeguards.
- Designed and evaluated multimodal logo-detection pipelines using **InternVL3, Qwen2.5-VL, and Azure OpenAI APIs (GPT-4o, o1/o4)**; built custom datasets and optimized inference through prompt engineering and quantization. Improved fine-grained classification by **fine-tuning with LoRA**.

Augmented Sports Technologies | ***Paris, France***
Deep Learning Engineer | *September 2024 – February 2025*

- Built a multi-task **Transformer** for table tennis stroke detection and classification using spatio-temporal learning and **NMS**/tolerance strategies; **performed model inference and evaluation,** achieved **88% recall.**

EDUCATION

Télécom Paris — Institut Polytechnique de Paris | ***Paris, France***
M.Eng. in Data Science & Artificial Intelligence | *2023 – 2025* ***GPA: 3.9/4.0***

- **Focus:** Machine Learning, Deep Learning, Statistical Learning, Computer Vision, NLP/LLMs, Databases, Optimization.

Lebanese University — Faculty of Engineering | ***Lebanon***
Engineering Degree in Electrical & Telecommunications | *2019 – 2023* ***GPA: 4.0/4.0***

- **Focus:** Algorithms, Programming, Networks, Signal Processing, Probability, Statistics, Electronics.

TECHNICAL SKILLS

- **Programming Languages:** Python, C++, C#, Java, SQL, HTML, CSS, MATLAB
- **Machine Learning & Deep Learning:** Supervised and Unsupervised Learning, Classification, Regression, Clustering, Feature Engineering, Model Selection, Computer Vision, NLP, GAN, Diffusion Models
- **GenAI & Retrieval** : Prompt engineering, embeddings, Qdrant, BM25, reranking, Azure OpenAI APIs, Mistral, RAG systems, vector databases, hybrid retrieval, LLM evaluation
- **Libraries and Frameworks:** PyTorch, LangChain, LangGraph, HuggingFace, Scikit-learn, NumPy, Pandas
- **Tools and Platforms:** Databricks, Git, GitHub, Bitbucket, n8n, Docker, Linux, FastAPI, AWS

PROJECTS

- **Biomedical Classification of Skin Lesions:** Combined U-Net segmentation (Dice 0.81) with engineered features (Biomedical ABCD Rules) and SVM.
- **Image Inpainting (Criminisi):** Implemented exemplar-based inpainting from scratch using NumPy, SciPy, and scikit-image.
- **Account Management System:** Developed a C# WinForms app with a SQL Server backend for managing accounts and transactions.

LANGUAGES

- **English:** Fluent (C1) / **French:** Advanced — DELF B2 / **Arabic:** Native