

Ibrahim Al Ayoubi

☎ 06 68 92 47 70 • ✉ ayoubi192003@gmail.com • 🌐 ibrahimalayoubi.netlify.app
in ibrahim-al-ayoubi • 🌐 ibrayoubi10 • 🚗 Driving Licence (B)

Summary

Data Scientist specialised in Machine Learning, Computer Vision and Deep Learning, with hands-on experience building medical image segmentation models based on CNN, Transformer and self-supervised architectures. Skilled in designing end-to-end pipelines from data preprocessing to training, evaluation and deployment. Immediately available for a permanent (full-time) position.

Technical Skills & Certifications

Programming: Python, SQL, Java, C/C++

Machine Learning & AI: Machine Learning, Deep Learning, Computer Vision, NLP, LLMs, ViTs, RAG

ML Frameworks & Libraries: PyTorch, TensorFlow, Scikit-learn, XGBoost, OpenCV, Pandas, NumPy

Data Engineering: ETL Pipelines, Data Processing, Feature Engineering, Apache Spark, Hadoop

Databases & Vector Stores: Qdrant, ChromaDB, PostgreSQL, MySQL, Oracle, Neo4j, NoSQL

Backend & Deployment: FastAPI, REST APIs, Docker, Streamlit

Developer Tools: Git, GitHub, GitLab, Linux

Languages: French (C1), English (C1), Arabic (C2)

Certifications: IBM Fundamentals of AI Agents Using RAG and LangChain, IBM ML Professional Certificate

Experience

Machine Learning / Computer Vision Engineer (Internship) - **ESILV**

La Défense, France

Technologies: Python, PyTorch, OpenCV, CUDA, Deep Learning, Computer Vision, Git

January – July 2026

- Designed, trained and optimized deep neural networks for medical image segmentation, targeting accurate pixel-level prediction and robust generalization.
- Implemented and benchmarked state-of-the-art segmentation architectures, including DINOv2-based U-Net, TransUNet and DeepLabV3+, combining CNN, Transformer and self-supervised visual representations.
- Built an end-to-end pipeline covering preprocessing, training, validation, checkpointing, inference and evaluation.
- Performed systematic model comparison using Dice Score, IoU and HD95 to assess region overlap and boundary accuracy.
- Developed and evaluated advanced data-augmentation strategies to improve robustness and reduce overfitting.
- Achieved a +3 to +5% absolute improvement in Dice Score compared with the baseline segmentation model.

Machine Learning & Knowledge Graph Engineer (Internship) - **INRIA**

Montpellier, France

Technologies: Python, Java, SQL, InteGraal, Prolog, RDF, Git/GitLab

June – July 2025

- Designed a domain ontology and declarative SQL-RDF mappings to unify heterogeneous relational sources into an RDF knowledge graph.
- Implemented existential rules (Datalog[±]) in InteGraal for ontology-based reasoning and forward-chaining inference.
- Engineered an ETL pipeline ingesting several million weather records for a precipitation-forecasting workflow.

Education

Master's in Computer Science - AI and Data Science

2024–2026

UFR des Sciences, University of Montpellier

Double Bachelor's in Mathematics & Computer Science

2021–2024

UFR des Sciences, University of Montpellier

Projects

RAG System for Medical Imaging Research

Personal Project

Technologies: Python, Qdrant, PostgreSQL, Docker, LLMs, RAG

August 2026

- Engineered an end-to-end Retrieval-Augmented Generation (RAG) system over 3,500+ scientific papers on medical image segmentation.
- Built an automated ingestion pipeline for arXiv retrieval, PDF parsing, chunking, embedding generation, deduplication and vector indexing in Qdrant.
- Developed a FastAPI REST backend orchestrating retrieval, LLM generation and metadata management.
- Containerised the application stack with Docker, separating API, vector database and relational database services for reproducible deployment and persistent storage.