Mohamed EL AMRANI
Data Scientist

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Data Scientist specializing in data exploration, processing, and manipulation, I design robust and intelligent solutions based on artificial intelligence, machine learning, and model optimization. With hands-on experience in both industry and research labs, I am ready to contribute to ambitious projects in a permanent position, with mobility across France.

PROFESSIONAL EXPERIENCE

Data Scientist (internship) – LIPN-LaMSN / Paris-France | April 2025 – September 2025

Development and experimentation of deep neural network compression methods

- Applied Tucker decomposition on 3D convolutional layers to reduce the number of parameters and inference time of segmentation models.
- Implemented and integrated post-training compression modules into the nnU-Net pipeline, adapting model loading and inference.
- Evaluated performance on medical 3D image datasets (Dice score, inference time, memory size), achieving significant model size reduction with limited impact on accuracy.
- Used a Linux server for training, compression, and model evaluation.

Tools : Python, PyTorch, nnU-Net, TotalSegmentator, Tensor Decomposition (Tucker), Linux

Data Scientist (Stage) – CodySoft / Paris-France | June 2024 – September 2024

Developed an LLM-based solution for the automatic evaluation of student defense reports.

- Designed a pipeline combining answer generation and automatic summarization to analyze defense reports.
- Collected, cleaned, and annotated an academic corpus.
- Utilized agents and compared LLM models.
- Drafted a research report presenting the methodology and results.

Tools : Python; LLM, Fine-Tuning, Hugging Face.

Data Scientist (Stage) – Mondiale Solution Services (M2S) / Casablanca-Morocco | July 2023 – October 2023

Implementation of an intelligent system for detecting damage on vehicles (computer vision and image processing)

- Collected and cleaned data, and performed exploratory analysis.
- Developed and evaluated machine learning models.

Tools : Python, YOLO, labelImg.

EDUCATION

Master's Degree in Data Exploration and Decision Support (EID²)
Université Sorbonne Paris Nord (USPN) • Paris, France • September 2024 - september 2025

Master's Degree in Web Intelligence and Data Science (WISD)
Faculty of Sciences Dhar El Mehraz (FSDM) • Fez, Morocco • September 2023 - June 2025

Bachelor's Degree in Mathematical and Computer Sciences (SMI), specialization: Computer Engineering
Faculty of Multidisciplinary Studies Taza (FPT) • Morocco • September 2022 - June 2023

SKILLS

- **Data Science :** Machine Learning, Deep Learning, Computer Vision, Scikit-Learn, PyTorch, TensorFlow, Keras
- **NLP/ AI Agent :** LLM, LangChain, LangGraph, CrewAI, LangFuse, LangSmith, Ollama, RAG, QLoRA
- **Languages & Frameworks :** Python, R, Java, Jakarta EE, C/C++, Flask, Streamlit
- **Databases :** SQL, Oracle, MySQL, SQL Server
- **Tools & Methodologies: :** Git, Jupyter, VSCode, Postman, GitHub, Scrum, QGIS, Lunix
- **Soft skills :** Problem-Solving, Curiosity, Collaboration, Communication
- **Langueges :** Français (Courant), Anglais (Intermédiaire)

PROJECTS (Details of the projects are available at: https://elamrani-mohamed.vercel.app)

- ✓ **Development of an Image Caption Generation Model with VIT Encoder and LLM Decoder**
- ✓ **Detection of Arabic texts generated by LLMs using the AraBERT model**
- ✓ **Instance segmentation of players using YOLOv5 with the Roboflow framework**
- ✓ **Construire et développer un nouvel Algorithme d'0ptimisation des paramètres du réseau neuronal**