WIJDANE EL KARAMI

Final Year Internship (PFE) - Data Scientist & AI

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PROFESSIONAL SUMMARY

•MSc student in **Advanced Machine Learning and Multimedia Intelligence**, passionate about engineering intelligent systems via Deep Learning, GenAI, and Multimodal technologies. **I am seeking a 6-month final-year internship (PFE) starting February** to leverage my data science expertise and build robust solutions within an innovative environment.

EDUCATION

•**Faculty of Sciences Dhar el Mahraz** *09/2024 – 08/2026*
Master in Advanced Machine Learning and Multimedia Intelligence Fes, Morocco

•**Faculty of Sciences Dhar el Mahraz** *09/2021 – 08/2024*
Bachelor in Mathematics and Computer Science Fes, Morocco

•**Le Jasmin High School** *09/2020 – 06/2021*
High School Degree in Physics Sefrou, Morocco

PROFESSIONAL EXPERIENCE

•**AI Engineer Intern – Logi Sakan** *07/2025 – 09/2025*
Technologies : *Python, Scikit-learn, Pandas, NumPy, Flask* Sefrou, Morocco

– Designed and implemented a **Content-Based Recommendation System** using **Cosine Similarity** and **KNN** algorithms to match users with relevant property listings.
– Conducted extensive Feature Engineering on heterogeneous real-estate data (categorical attributes, price normalization), improving the matching model's precision.
– Integrated the inference engine into a web prototype to demonstrate real-time recommendation capabilities and validate user engagement metrics.

SKILLS

Programming Languages: Python, C/C++, Java, MATLAB, Shell/Bash.

Databases: SQL (PL/SQL), MongoDB (NoSQL), Neo4j (Graph), ChromaDB (Vector), SQLite.

Machine Learning: Scikit-learn, Supervised & Unsupervised Learning, Reinforcement Learning (RL), Multi-Agent Systems, Feature Engineering, XAI.

Deep Learning & Multimedia: PyTorch(3D), TensorFlow, Transformers, CNN/RNN, Video Analysis, Speech Recognition, Computer Vision.

Generative AI & NLP: LLMs, RAG, LangChain, Ollama, Embeddings, Hugging Face, Prompt Engineering, VLMs (Multimodal).

MLOps & Edge AI: Docker, CI/CD, MLflow, DVC, FastAPI, Edge AI (IoT Deployment), Model Monitoring, Linux Admin.

Data Visualization: Power BI, Matplotlib, Seaborn, Plotly, Streamlit, Dash.

Tools & Methods: Git, Jupyter, Google Colab, n8n, Agile (Scrum), UML, Research Methodology.

Languages: Arabic (Native), French (Fluent), English (Fluent).

Soft Skills: Critical Thinking, Scientific Writing, Problem Solving, Adaptability, Teamwork.

PROJECTS

Medical Image Analysis with CNN *Academic project*
Stack: *Python, TensorFlow/Keras, OpenCV, Matplotlib, Scikit-learn*
• Designed and trained a custom CNN for medical anomaly detection, implementing Data Augmentation techniques to mitigate overfitting on limited datasets.
• Evaluated model performance using Confusion Matrices and Learning Curves, optimizing the architecture for high recall/precision.

Privacy-First Medical RAG Assistant (Local LLM)
Stack: *Python, LangChain, Ollama (Llama 3), ChromaDB, FastAPI*
• Architected a fully offline Retrieval-Augmented Generation RAG system ensuring GDPR compliance for sensitive medical data handling.
• Orchestrated semantic search using ChromaDB (Vector DB) and deployed the inference backend via FastAPI.

Interactive Image Processing & Analysis Toolkit *Academic project*
Stack: *Python, OpenCV, Tkinter, NumPy, SciPy, Scikit-image*
• Developed a comprehensive desktop application implementing core **Computer Vision algorithms** including Frequency Domain Filtering (FFT), Morphological Operations, and Feature Extraction (Harris, SUSAN).
• Refactored legacy **MATLAB** scripts into a modular **Python** architecture, designing a responsive **Tkinter GUI** to visualize real-time spatial and spectral transformations.

Multimodal Recommendation System (DeepFM) & CTR Prediction *Academic project*
Stack: *Python, PyTorch, DeepCTR-Torch, Scikit-learn, ResNet50*
• Developed a **Click-Through Rate (CTR) prediction model using DeepFM**, fusing sparse user interactions with dense visual embeddings to address the cold-start problem.
• Engineered a custom feature extraction pipeline "from scratch": processed 45k+ images using **ResNet50** (Transfer Learning) and applied **PCA** for dimensionality reduction (2048 → 128) to optimize computational efficiency.
• Achieved a competitive validation **AUC of 0.91** with official embeddings.

LEADERSHIP & ACTIVITIES

•**General Secretary - IT & AI Club** *Fes, Morocco*
Faculty of Sciences Dhar el Mahraz (FSDM) 10/2025 – Present

– Orchestrating technical workshops and seminars on **Machine Learning** and **Python**, fostering knowledge sharing among students.
– Coordinating the organization of local Hackathons and AI challenges, managing logistics and team communication.

CERTIFICATIONS

•**Data Scientist Professional Certificate**, DataCamp *2025*
•**Ethical Hacking Essentials (In Progress)**, Cisco Networking Academy *2025*
•**Training ML & DL: Fundamentals and Apps**, ASSI *2025*