IBRAHIM KABORE

Ben Guerir, Morocco | +212-6555-70811 | ibrakabore01@gmail.com
linkedin.com/in/ibrahimkabore | github.com/MORAWA-dev | **Live App: Soil Analysis Platform**

OBJECTIVE

Geomatics & Environmental Data Science Engineer (M.Sc., 2025) pivoting into **AI Engineering**. Specialized in building production-grade ML systems for agricultural monitoring. AI-literate with hands-on experience in **LLM Engineering, RAG orchestration, and QLoRA fine-tuning**. Passionate about deploying Agentic AI to solve complex environmental and agronomic challenges in Africa.

SKILLS

AI & GenAI: RAG Systems, Agentic Workflows (CrewAI, Nvidia NeMo), QLoRA Fine-tuning, LangChain
Machine Learning: Scikit-learn, PyTorch, Random Forest, PLSR, Model Validation (RMSE, R2), MLOps
Geospatial AI: Google Earth Engine (GEE), Sentinel-1/2 SAR Analysis, QGIS, Rasterio, GDAL
Languages & Tools: Python (Advanced), R (Shiny), SQL, Docker, Git, LaTeX, Google Colab Pro

EXPERIENCE

Data Science Intern (Soil Spectroscopy & ML Modeling) Feb. 2025 – Jul. 2025
UM6P - Center for Remote Sensing Applications (CRSA) *Ben Guerir, Morocco*

- Engineered automated pipelines for soil spectral data (Vis-NIR), utilizing SNV/MSC and PCA for standardization.
- Trained Random Forest and SVR models to predict Soil Organic Matter with high precision tailored for Moroccan soil.
- Established the "Trust & Quality" framework to calculate model uncertainty (Confidence Intervals).
- Harmonized multi-source soil libraries across Mediterranean datasets, ensuring QA/QC for large-scale integration.

Remote Sensing Researcher (Radar-Based Monitoring) Feb. 2024 – Jul. 2025
Research Project (Sidi Bennour Region) *Morocco*

- Built cloud-based monitoring workflows using **Google Earth Engine (GEE)** to process multi-temporal Sentinel-1 (SAR).
- Integrated climate data (CHIRPS Rainfall, ERA5) with vegetation indices to model crop response to thermal stress.
- Conducted time-series analysis to differentiate resilience patterns between irrigated and rainfed systems.

PROJECTS

Agentic AI Chatbot for Agriculture | *Python, RAG, QLoRA, CrewAI* 2025

- Developed an AI-powered agent using **RAG** to assist farmers with context-aware agronomic advice.
- Implemented fine-tuning of open-source models (LLama) using **QLoRA** for domain-specific accuracy.
- Orchestrated multi-agent systems using **CrewAI** and **Nvidia NeMo** for complex query routing.

Predictive Soil Analytics Dashboard | *R, Shiny, Machine Learning* 2025

- Built an interactive dashboard (Live Link) for real-time soil property predictions.
- Implemented backend inference using pre-trained Chemometric ML models with a "Farmer Guide" interface.

EDUCATION

University Sultan Moulay Slimane (FST Béni Mellal) Béni Mellal, Morocco
Master of Science in Geomatics & Environment (Specialization: Machine Learning) *Jul. 2025*

University Sultan Moulay Slimane (FST Béni Mellal) Béni Mellal, Morocco
Bachelor of Science in Earth Sciences (Geomatics & Land Planning) *Sept. 2023*

CERTIFICATIONS & ADVANCED LEARNING

AI Engineering Track (Agentic AI): Completed "Agentic AI with Andrew Ng" & "Nvidia's NeMo Agent Toolkit".
AI Engineer Core Track: Mastered LLM Engineering, RAG implementation, and QLoRA Fine-tuning.
Machine Learning Specialization: Stanford Online / DeepLearning.AI (99% Completed).
Other: Aspire Leadership Program (2025), NASA ARSET (Remote Sensing).