Irinasoa Sitraka Laura Ravelojaona

Data Scientist / Machine Learning Engineer

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Portfolio: `https://portfolio-project-ten-mu.vercel.app/`

Professional Summary

Organized and detail-oriented Data Scientist with expertise in NLP, LLM, and Machine Learning applied to business challenges. Proactive in architecting scalable AI solutions and operationalizing strategic technical decisions. Experienced in remote collaboration and agile environments, capable of delivering high-value results in distributed teams.

Professional Experience

Since 2024 — **Data / AI Engineer**, *eTech Consulting*, Antananarivo

- Architected and deployed end-to-end Data/ML pipelines, optimizing business processes by automating time-consuming tasks and ensuring system scalability.

- Engineered a production-grade OCR and LLM document digitization engine, establishing a rigorous ground truth protocol that maximized text extraction precision.

- Developed a Computer Vision stamp detection MVP, optimizing the model to maximize true positives while mitigating overfitting through fine-tuned generalization strategies.

- Implemented a Retrieval-Augmented Generation (RAG) system for document search, integrating Chain of Verification (CoVe) to eliminate hallucinations and ensure semantic accuracy.

- Orchestrated an anomaly detection pipeline for bank statements, utilizing OCR for raw data extraction and LLM analysis to generate structured attribute-value pairs.

- Managed the full data lifecycle for a ResNet-based age classification model, leading the project from exploratory analysis to the deployment of a Minimum Viable Product (MVP).

Jun 2023 – Feb 2024 — **Data Scientist**, *Relia Consulting*, Antananarivo

- Designed industrial-grade Data/ML pipelines and provided critical technical expertise during deployment phases, ensuring robust service delivery.

- Built a specialized conversational agent using the Rasa framework for accounting inquiries, managing the complete data lifecycle from collection to end-to-end testing.

- Developed a stock prediction system using Linear Regression and Adam optimization, utilizing Weights & Biases to track experiments and refine feature engineering strategies.

Sep 2021 – Feb 2023	**Freelance Developer**, *RKWT Ocean Ltd*, Mauritius (Remote)

- Delivered web solutions and Progressive Web Apps (PWA) in a fully remote, cross-functional team environment, ensuring effective communication and timely delivery.
- Led strategic PostgreSQL database optimization and management for a major Ministry of Agriculture project.
- Collaborated on the CNAPS project to develop core application modules, successfully implementing maternity benefit features and ensuring system-wide interoperability.

End-to-End Personal Projects

Project **Multimodal RAG Agent – Deployment & Monitoring**

- Designed a mobile-first RAG agent (React + Vite, Qdrant) with an animated chat interface.
- Implemented real-time monitoring and alerting dashboards, significantly reducing operational incidents and latency.
- *Stack: React, Vite, Qdrant, Docker, Tailwind, CoVe, RAG.*

Project **Clinical Scribe – Llama 3 8B Fine-tuning**

- Fine-tuned Llama-3-8B using LoRA to convert disorganized transcripts into structured SOAP notes, adhering to strict confidentiality (PII anonymization).
- Validated performance via ROUGE-L and clinical metrics on private and Kaggle datasets.
- *Stack: Python, Airflow, Kaggle, QLoRA, Transformers, PEFT.*

Project **Anomaly Detection for Credit Scoring**

- Developed a risk assessment system using XGBoost on highly imbalanced datasets, employing oversampling techniques to improve recall.
- Deployed a scoring API via FastAPI for seamless back-office integration.
- *Stack: XGBoost, Feature Engineering, FastAPI, Imbalanced Data Techniques.*

Technical Skills

Languages & Backend	Python, FastAPI, SQL
DevOps & Cloud	Git, Docker, CI/CD, Google Cloud Platform (GCP)
Big Data & ML	Apache Spark, Hadoop, Vertex AI, MLflow, Airflow, DVC
AI & LLMs	OpenAI, Llama 3, Gemini, Large & Small Language Models
Advanced AI	RAG, Agentic AI, LangChain, LangGraph, LoRA, QLoRA, PEFT, vLLM
Tools & Platforms	Kaggle, Google Colab, Hugging Face, Weights & Biases

Education

Nov 2023	**Computer Science Engineer**, *University of Fianarantsoa, ENI*

- GPA: 3.2/4.0
- Relevant Coursework: Machine Learning, Data Modeling, Deep Learning, Linear Algebra.

Achievements & Community

Competitions Finalist, Datatour 2025

Hackathons Active participant in internal university hackathons, focusing on rapid prototyping and AI solutions.

Certifications Columbia University Certification (Data/AI specialized)

Languages

French (Fluent), English (Professional)