Mohamed Habib

Data Scientist

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SUMMARY

Data Scientist with 1+ years of experience in data analysis, machine learning, and MLOps, skilled in transforming complex data into actionable insights through interactive dashboards, predictive modeling, and data-driven solutions, and passionate about leveraging AI and analytics to support business decisions and drive measurable impact.

Technical Skills

Programming Languages: R, Python, Scala, SQL
Tools and Frameworks: Git, Jupyter Notebook, Visual Studio, MySQL Workbench, Mlflow, Apache Airflow, Google Colab, Apache Spark, Apache Kafka, Jenkins, Nexus, SonarQube, Docker, Grafana, Prometheus
Development Frameworks: Django, Flask
Soft Skills: Teamwork, motivation

Experience

- **Terminal à Conteneurs de Nouakchott (TCN)** *Aug – Present*
  Data Scientist – Full-time Nouakchott, Mauritania
  – Developed and deployed real-time data streaming pipelines for operational analytics.
  – Performed data exploration and analysis to optimize container terminal operations.

- **Terminal à Conteneurs de Nouakchott (TCN)** *6 months*
  Data Science Intern Nouakchott, Mauritania
  – Designed and developed a Django-based web platform for automated maintenance management (PostgreSQL, Docker).
  – Built interactive KPI dashboards and automated email notifications for maintenance follow-ups.
  – Integrated predictive maintenance models with MLflow tracking and Airflow automation.
  – Implemented CI/CD pipeline with Jenkins for continuous model deployment.

- **Banque Nationale de Mauritanie (BNM)** *3 months*
  Intern Nouakchott, Mauritania
  – Development of a Django application to manage ATM transactions and track those to be cancelled due to network outages.
  – Participation in the BNM_Data_Warehouse project, a web application to centralize and organize data via Django, facilitating analysis and decision-making.

Education

- **Engineering Degree in Statistics and Data Engineering**
  École Supérieure Polytechnique (ESP), Mauritania 2020 – 2025

Projects

- **Transactional Fraud Detection** *2025*
  Machine Learning Project
  – The project focused on a critical challenge: Transactional Fraud Detection. We implemented and compared several unsupervised machine learning models, including Isolation Forest, LOF, and a Deep Learning AutoEncoder, to identify complex and even unknown fraud patterns without needing pre-labeled data.

- **Educational Inequality and Illiteracy Analysis** *2023-2024*
  Data Analysis Project
  – Analysis of educational inequalities and illiteracy in Mauritania and creation of a logistic regression predictive model to assess illiteracy status based on characteristics such as gender, age, etc.

- **Smart Agriculture Platform** *Oct. 2023 - Present*
  Agricultural Technology Platform

– Development of an integrated platform for agriculture: crop recommendation, production forecasting, pest control, real-time weather data. Use of innovative technologies such as AI and IoT to optimize yields and ensure sustainability.

- **Fine-tuning an LLM for Sentiment Analysis** *2025*
  NLP, Deep Learning
  – Fine-tuning of a language model (LLM) with **PEFT (Parameter-Efficient Fine-Tuning)** and **LoRA (Low-Rank Adaptation)** for sentiment analysis.
  – Implementation of training and evaluation pipelines with **Hugging Face Transformers, PyTorch, TRL** and **PEFT**.
  – Performance optimization by reducing computational cost while improving prediction accuracy.

- **CI/CD Pipeline with Real-time Monitoring for Spring Application** *November 2024*
  DevOps Project
  – Creation and automation of a complete CI/CD pipeline: build, tests, deployment and monitoring.
  – Tools used: Git, Jenkins, Maven, JUnit, Nexus, SonarQube, Docker, Prometheus, Grafana.
  – Code quality improvement, alert automation and performance optimization.

- **Recommendation System for Project Management** *2025*
  AI, NLP, Graph Neural Networks
  – Development of an intelligent information retrieval system for project managers, integrating **RAPID-GNN** and **RAG** for contextual knowledge access.
  – Construction of a data processing pipeline including ingestion, preprocessing and indexing of unstructured information.
  – Use of **Graph Neural Networks (GNNs)** to model relationships between entities and improve document retrieval accuracy.
  – Implementation of **RAG (Retrieval-Augmented Generation)** for contextual content retrieval, optimized with **FAISS** and **Hugging Face Transformers**.
  – Deployment of the application as a desktop interface with **Tkinter**.

Languages

- **Arabic:** Native
- **French:** B2
- **English:** Intermediate
- **German:** Beginner

Achievements

- First place in ESP Datathon for transactional fraud detection

Certifications

•Natural Language Processing with Classification and Vector Spaces

•Natural Language Processing with Probabilistic Models

•Natural Language Processing with Attention Models

•Natural Language Processing with Sequence Models

•Introduction to Microsoft Azure Cloud Services

•Microsoft Azure Services and Lifecycles

•DevOps: CI/CD with Maven, Jenkins, SonarQube, Nexus