

HAMMANI MOHAMED

Data Engineer | Data Analyst

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PROFESSIONAL EXPERIENCE

Data Engineer

CDAO Services

- Dec 15, 2025 – Present
- Montreal, Canada
- My mission within the team is to:
 - Design and industrialize fully automated data pipelines using **Airflow**, **DBT**, **Snowflake**, **Databricks** and **Azure**.
 - Design and implement end-to-end pipelines covering data ingestion, transformation, and delivery for analytical use cases.
 - Some projects and work delivered:
 - Development of an AI-based data extraction system from complex PDF documents using **Azure Document Intelligence** and **Snowflake AI**.
 - Implementation of a hybrid approach combining AI extraction (layout) and business logic (labels, regex) to improve reliability of semi-structured data extraction.
 - Development of an advanced parsing engine capable of re-constructing complex structures (tables, timelines) from multi-page documents.
 - Industrialization of the full processing pipeline: **PDF** → **JSON** → **Airflow mapping** → **Parquet** → **Azure Blob Storage** → **Databricks**.
 - Data modeling and transformation with **DBT** across **RAW** → **CERTIFIED** → **CORE** → **CONSUMPTION** layers.
 - Refactoring of an email notification system into a configurable platform driven by **Snowflake**.
 - Development of a modular engine supporting **multi-backend execution** (**Snowflake** / **Databricks**) with dynamic email generation (HTML, CSV).
 - Resolution of critical platform issues (Airflow, circular dependencies, multi-environment configuration), improving pipeline stability.
 - Technologies: **Airflow**, **Snowflake**, **Databricks**, **DBT**, **Azure Blob Storage**, **Azure Document Intelligence**, **Python**.

Data Engineer & Data Analyst

BRP - Bombardier Recreational Products

- August 2, 2025 – 12 December
- Sherbrooke, Canada
- Conducted analysis and planning for international markets, supporting and advising regions on volume planning and sales forecasting for the next 12 months.
 - Developed reports and analyses for dealers to support decision-making.
 - Participated in order management operations by supporting analysts in maintaining and updating the order system.
 - Contributed to a global forecasting project in the recreational products industry.
 - Assisted in implementing methods to optimize shipment prioritization and categorization processes for dealers.
 - Technologies: **ETL**, **Data Warehousing**, **Power BI**, **Python**, **Predictive Models**, **SQL Server**, **Snowflake**, **AirFlow**.

BI & Big Data Engineer

Orange Business

- January 15 – August 01, 2024
- Rabat, Morocco
- Developed a data pipeline for migrating two reporting applications using a modern technology stack.
 - Technologies used:
 - Big Data: **Hadoop HDFS**, **Hive**, **Cassandra**, **Spark/Scala**, **Apache OOZIE**
 - Data Visualization: **Power BI**
 - Front-end: **Angular 16**
 - Strengthened understanding of large-scale data migration and reporting environments.

Data Science Intern

NOVEC - CDG Group

- May 20 – September 20, 2023
- Rabat, Morocco
- Developed a hate speech classification application using NLP on social media data.
 - Preprocessed textual data (tokenization, lemmatization, normalization) and used embeddings such as **BERT**, **RoBERTa**, and **text-embedding-ada-002**.
 - Trained and compared models: **SVM**, **KNN**, **XGBoost**, **CNN**, **LSTM**.
 - Model interpretability using **LIME** and **SHAP**, and implementation of a **Hard Voting** ensemble model.

Software Development Intern

HACA - High Authority for Audiovisual Communication

- May 15 – September 15, 2022
- Rabat, Morocco
- Designed and developed a hybrid mobile application for complaint management (Android/iOS).
 - Technologies:
 - Front-end: **Angular-Ionic**
 - Back-end: **Spring Boot** (REST, JPARepository, Spring Data, JPA, Hibernate)
 - Database: **Microsoft SQL Server**
 - Protocols: **HTTP / JSON**

LANGUAGES

English
French
Arabic

Bilingual
Advanced - C1
Native

TECHNICAL SKILLS

Data Engineering

- **Orchestration & Pipelines** : Airflow, ETL / ELT pipelines, Pipeline automation
- **Data Transformation** : DBT, Data Modeling, RAW → CERTIFIED → CORE architecture
- **Data Warehousing** : Snowflake, SQL Server
- **Big Data Processing** : Databricks, PySpark, Apache Spark
- **Cloud & Storage** : Azure Blob Storage, Azure Data Services
- **Data Extraction** : Azure Document Intelligence, PDF parsing (AI + rule-based)

Data Analysis & Querying

- **Languages** : Python, SQL
- **Data Manipulation** : Pandas, Data Cleaning, Data Validation
- **Analytics** : KPI definition, Exploratory Data Analysis (EDA)

Data Visualisation & BI

- **Tools** : Power BI (DAX, dashboards, reporting)
- **Visualization Libraries** : Matplotlib, Seaborn, Plotly
- **Business Insight** : Data storytelling, KPI dashboards, decision support

Machine Learning & AI

- **Libraries** : Scikit-learn, TensorFlow, Keras, PyTorch
- **Techniques** : NLP, Deep Learning, Model evaluation
- **Explainability** : SHAP, LIME

Tools & Practices

- **Version Control** : Git, GitHub, GitLab
- **Workflow** : Agile / Scrum, Jira
- **Engineering** : Debugging, CI/CD basics, multi-environment pipelines

EDUCATION

M.Sc. in Artificial Intelligence and Data Science
University of Sherbrooke - UDS

📅 08/2024–12/2025 📍 Sherbrooke, Canada

Data Science & BI

- Python, Power BI (DAX)
- Machine Learning, NLP, Explainability

Engineering Degree - Big Data, Data Science and BI

International University of Rabat

📅 2019–2024 📍 Rabat, Morocco

M.Sc. (Exchange Program) - Computer Science
Sorbonne University - SU

📅 2022–2023 📍 Paris, France

CERTIFICATIONS

- IBM - Big Data with Spark and Hadoop – Completed
- Microsoft Power BI Data Analyst Professional Certificate – Completed
- AWS Certified Machine Learning – In progress

FAVORITE QUOTE

“Nothing will work unless you do”