# Ahmed MAKROUM

Data Engineer & Full-Stack Web/Mobile Developer

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## Profile

State Engineer specialized in data engineering and full-stack development. Experienced in creating data pipelines, developing web applications, and utilizing cloud platforms. I am seeking a position where I can design and develop innovative projects, enhance system performance, and collaborate with technical teams to create impactful solutions.

## Experience

### Data Engineer
*Allianz Morocco*                                                                                  *03/2025 - 08/2025*

- Designed and deployed data pipelines (NiFi, Spark) for extraction, cleaning, and loading from internal insurance systems, automating previously manual processes.
- Integrated fragmented sources into a PostgreSQL warehouse, consolidating multiple business streams.
- Created dashboards with Metabase, making data accessible to business users and enabling direct visualization of key indicators.
- Developed and maintained a web application for health claims management in a microservices architecture (Spring Boot, Next.js), with fine-grained role management and secure authentication, used daily by business teams.

### Data Engineer
*BOTI School*                                                                                      *06/2024 - 08/2024*

- Developed a distributed ETL pipeline with Apache Beam on Google Cloud to process millions of user logs.
- Structured data from GCP buckets, enabling reliable behavioral analysis.
- Designed automated dashboards via Looker, adopted by the billing team to prioritize improvements and decision making.

### Web and Mobile Developer
*6solutions*                                                                                       *06/2023 - 08/2023*

- Developed a multi-service consulting platform (legal, medical, financial).
- Front-end built with Angular, back-end with Spring Boot.
- Designed and deployed the mobile version of the application in Flutter.

### Game Developer
*Finso*                                                                                            *07/2022 - 08/2022*

- Developed an educational game for children to introduce basic management and strategy concepts.
- Built with Unity, featuring interactive gameplay, polished animations, and a child-friendly interface.

## Projects

- **News Pipeline**: Multi-source scraping orchestrated with Airflow, streaming with Kafka, LLM enrichment (summaries + validation), monitoring with Prometheus, storage in Cassandra. (Python, Kafka, OpenAI, Airflow, Cassandra)
- **Website Log Analysis Pipeline**: Real-time collection of website event logs (clicks, page views), ingestion orchestration with Cloud Composer, data storage in BigQuery, creation of a dashboard for traffic and error tracking. (Cloud Composer, GCP, BigQuery, Python)
- **Morocco Price Tracker**: Daily price scraping (markets, supermarkets), PostgreSQL storage, dashboards for city/product comparison, inflation alerts. (Python, Airflow, Metabase, PostgreSQL)
- **JobTrack – Application Tracking**: Web app to manage job applications (CV, statuses, notes) with Cloudinary storage, real-time search, and statistics visualization. (Next.js, Tailwind, MongoDB, Cloudinary)

## Education

**Master's degree in Software Engineering and Networks**
(IT Methods Applied to Business Management)
EMSI – Moroccan School of Engineering Sciences                                                     *2020 – 2025*

**Certificate in Artificial Intelligence and Prompt Engineering**
ALX Academy                                                                                        *Jul. 2024 - Sep. 2024*
ALX AiCE – AI Fundamentals

## Certifications

*All certifications obtained via Coursera.*

- **Machine Learning with Python** (IBM)
- **IBM Data Engineering** (IBM)
- **Building Scalable Java Microservices with Spring Boot and Spring Cloud** (Google Cloud)
- **Introduction to Big Data with Spark and Hadoop** (IBM)
- **Python for Everybody Specialization** (University of Michigan)
- **Google Business Intelligence** (Google)

## Skills

- **Data Engineering:** ETL (NiFi, Airflow), Big Data (Hadoop, Spark), Kafka, PostgreSQL, Cassandra, GCP, AWS
- **Programming:** Python, SQL, Java, TypeScript
- **Web/Mobile:** React, Next.js, Flutter, Spring Boot, REST APIs
- **DevOps & Cloud:** Docker, Kubernetes, Git, CI/CD, Linux
- **Data Visualization:** Metabase, Superset, Power BI
- **Soft Skills:** Teamwork, Communication, Adaptability, Problem-solving

## Extracurricular Activities

Managed Gaming event logistics and sponsor relationships for the F&G EMSI club. Strengthened partnerships, increased visibility, and enhanced my communication and negotiation skills.

## Languages

- English – Fluent
- French – Fluent
- Arabic – Native
- Spanish – Basic