

Mohamed Abdelhalim

Data Engineer
Cairo, Egypt

✉ mohammadabdelhalim5@gmail.com

☎ +20 100 954 6668

🌐 [linkedin.com/in/abdel-halim](https://www.linkedin.com/in/abdel-halim)



github.com/1abdelhalim

SUMMARY

Data Engineer with production experience in building, and operating data systems at scale. Owned backend and analytics systems serving 400k+ users, while improving query performance, reducing API latency, and resolving data correctness issues in production. Strong foundation in Python, SQL and AWS services, with experience supporting both operational and analytical data workloads.

EXPERIENCE

Data Engineer

Jul 2025 – Present

4Sale International Co.

Cairo, Egypt

The #1 online classifieds marketplace in Kuwait

- Owned and operated a **time-series analytics layer** using **PostgreSQL / TimescaleDB** to store rolling user behavior metrics, reducing analytical query latency from approximately **5–10 minutes to under 5 seconds**.
- Implemented **continuous aggregates** and data retention policies to support BI dashboards while reducing storage footprint by approximately **50%**.
- Built and owned backend systems using **AWS Lambda, DynamoDB, and EventBridge**, including user-facing preference and control flows; reduced incorrect push deliveries by **30%**.
- Reduced P95 API latency by enabling **Provisioned Concurrency** on latency-sensitive AWS Lambda endpoints, improving response times from approximately **1.6s to under 450ms**.
- Implemented **idempotent update logic** using DynamoDB conditional writes to prevent race conditions during concurrent user preference changes in high-volume campaigns.
- Built a lightweight **Special Events Tracker** to annotate dashboards with major business events, reducing root-cause analysis time for metric anomalies by approximately **60%**.
- Diagnosed and fixed critical data logging issues, restoring accuracy of engagement and retention metrics used by growth and marketing teams.
- Optimized large-scale analytical queries by tuning `work_mem`, parallel workers, and aggregation strategies for user-level segmentation workloads.

PROJECTS

Hakim: Arabic Medical Data Pipeline

Graduation Project

- Built **web scraping pipelines** to collect, clean, and normalize Arabic medical reference content into structured datasets for downstream retrieval.
- Designed and maintained a **vector store (ChromaDB)** for semantic retrieval, including document chunking, embedding generation, and re-indexing as data sources evolved.
- Developed a FastAPI backend to serve retrieved medical context to LLMs, prioritizing data-backed answers over generic generative responses.

EDUCATION

B.S. in Computer Science

Oct 2021 – Jul 2025

Mansoura University

Egypt

- **Excellent with Honors (Top 5% of Class)**

TECHNICAL SKILLS

- **Languages & Frameworks:** Python, SQL, FastAPI
- **Data:** PostgreSQL, TimescaleDB, Snowflake, Apache Airflow, dbt
- **Cloud :** Amazon Web Services (AWS) - Lambda, EventBridge, DynamoDB, SQS/SNS.
- **Tools:** Docker, Linux, Git, Web Scraping (BeautifulSoup, Selenium, Scrapy), ChromaDB

ACHIEVEMENTS

- **ECPC Finalist (2025) - Egyptian Collegiate Programming Contest**
- **AWS Certified Cloud Practitioner**
- **Apache Airflow Fundamentals**