

Mohammed Nabil

Data Engineering & Analytics

Cairo, Egypt | mohammed.nabil@gmail.com | linkedin.com/in/mohammed-nabil-75474b18

SUMMARY

Data engineering and analytics leader with long experience in software development, data platforms, analytics engineering and machine learning, with a background in spatial analytics. I lead teams and still design, code and ship hands-on, and I own the data platform as a product: user needs, specs, priorities and measuring impact. Moved from lead and staff engineer to manager to director. Built Raisa Energy's data platform and its data engineering team from scratch, and run the AI analytics product the company uses for its daily data questions.

SKILLS

Leadership and management: Team building and hiring, coaching and mentoring, people management (compensation and budget), strategy, roadmap and OKRs/KPIs, technical product ownership, stakeholder alignment, remote collaboration across time zones

Data platform: Snowflake (administration, role-based access control, performance tuning, cost management, Snowpark, Cortex), dbt (models, incremental models, tests, documentation, lineage), advanced SQL, Python, PySpark

Architecture and modeling: Dimensional modeling, medallion-style layered architecture, data marts, semantic layer, ETL / ELT pipelines, SCD2 history tables

Ingestion, quality and governance: Configuration-driven ingestion, change detection, Azure Data Factory, pipeline orchestration, quality gates between layers, access control, data catalog and lineage, monitoring and alerting

AI and LLMs: Large language models (Claude), Claude Code, LangGraph, LangChain, Model Context Protocol (MCP), Snowflake Cortex, AI agents, evaluation with verified questions

Machine learning and spatial: scikit-learn (regression, classification, clustering), model validation and explainability (SHAP), Esri ArcGIS, PostGIS, spatial features and scoring

Cloud and delivery: Microsoft Azure (virtual machines, Blob Storage, Functions, queues, container services), Git, Azure DevOps (CI/CD), Flask and FastAPI (web apps and APIs), SQL Server, PostgreSQL, Power BI, Spotfire

Also evaluated hands-on: Databricks, Apache Airflow, Dagster, Prefect, Great Expectations, CrewAI, streaming data pipelines

WORK EXPERIENCE

Director of Data Engineering

Jan 2023 – Present

Raisa Energy, Cairo, Egypt / Denver, US

- Built Raisa's data engineering team from scratch to up to seven engineers, and lead it hands-on in architecture, design and code.
- Own hiring, compensation and the team budget, and contribute to company-level budget planning. Shape company strategy, roadmap and OKRs/KPIs with the leadership team.
- Act as product owner for the internal data and analytics platform (user needs, specs, backlog, impact), work remotely with the Denver team across time zones, and introduced R&D weeks to evaluate new technology; the first outcome was a Claude vs ChatGPT benchmark for writing SQL.

Key deliverables

- **Data warehouse:** Designed the Snowflake warehouse in layers (staging, intermediate, data marts, BI layer), a custom medallion architecture with dimensional modeling. It brings about ten source systems into one place for several teams across land, subsurface, reserves and accounting.
- **Shared data layers:** Built core layers with one definition per metric: a public data layer over several data providers (Novi, Enverus, WellDatabase) and a financial layer joining partner billing (EnergyLink) with accounting (W Energy), plus a data mart for each team that turned repeated requests into self-service.
- **Ingestion and reliability:** Built a configuration-driven extract-and-load framework that syncs only changed tables, handles deletes without change data capture, and keeps SCD2 history of both data and schema changes. dbt tests act as gates between layers, so users keep the last good data instead of wrong data. Three environments with CI/CD in Azure DevOps.
- **Governance, performance and cost:** Role-based access control in Snowflake, built-in and custom dbt tests, documentation and lineage pushed to Snowflake. Tuned performance and cost with query profiles, incremental models and clustering per data mart.
- **AI analytics platform:** Built and run an MCP server and semantic layer on Snowflake Cortex, with Azure AD single sign-on and role-based access. Used company-wide for daily data questions; answer quality is tracked with verified questions and an evaluation dataset.
- **AI-assisted invoice audit:** Automated around 40 checks on every partner invoice (joint interest bills), with fixed checks in Snowflake and AI only for steps that need judgment. Review time went from days to hours.

- **Scores and indicators:** Built scoring models and indicators from engineering, financial and production data to support investment decisions. For example, the bounding score: one number that measures how surrounded each well is by nearby wells and the risk of losing production when new wells are drilled close by, built from spatial features such as wells within a distance, distance to the nearest well, and neighbours' cost and production. Used to approve or reject funding requests for new wells.
- **Model run snapshots:** Centralized the ARIES reserves and economics runs: each run is snapshotted into Snowflake and a dashboard compares any two. Comparisons went from days to hours, used by the whole company.
- **AI agents and LLM tools:** Built AI agents and LLM tools for reporting, text-to-SQL (including a Wren AI evaluation) and document data extraction; moved from CrewAI to LangGraph for tighter control of agent flows. Mentored an intern who built an agentic reporting tool.

Data Engineering Manager

Jan 2022 – Dec 2022

Raisa Energy, Cairo, Egypt / Denver, US

- Promoted to build Raisa's first dedicated data engineering team, separated from the combined data science and engineering team. Hired and onboarded the engineers.
- Led the team to build the Snowflake data warehouse, with the pipelines, tools and dashboards for every team.

Staff Data Scientist (Data Engineering and Machine Learning)

Jun 2018 – Dec 2021

Raisa Energy, Cairo, Egypt / Denver, US

- Ran a hands-on evaluation of Snowflake against Databricks and chose Snowflake (SQL-first analysts, mostly structured data, low operating effort for a small team). Introduced Snowflake and dbt as the company data platform and designed it end to end.
- Built ETL / ELT pipelines and cloud data infrastructure for the data science team, and a framework to deploy machine learning models with one script, logging features and predictions in production.
- Built machine learning models (regression, classification, clustering) for well operating cost, landowner record deduplication and operator assignment, validated with grouped location-and-time splits and explained with SHAP.

GIS Development Manager

Nov 2015 – May 2018

Link Development, Cairo, Egypt

- Owned the technical direction of GIS development, mentored one direct report and coordinated with engineers in other teams.
- Built GIS and spatial analytics projects, chatbots and machine learning work, including clustering families in the Egypt Census 2017 data.

Technical Lead / Senior Developer

Oct 2005 – Nov 2015

Esri Northeast Africa, Cairo, Egypt

- Led a team of up to nine engineers across front end, back end and spatial data analysis, and ran the Agile Scrum process.
- Built GIS systems, including vehicle tracking for more than 200 vehicles (El Ahsa Municipality, KSA) and a spatial homeland security system for Bahrain, the Geographical Security System (GSS).

EDUCATION

Professional Diploma in Management of Technology

2022

Nile University, Graduate School of Management of Technology, Cairo, Egypt

Bachelor of Computer Science

2004

Cairo University, Faculty of Computers and Artificial Intelligence, Cairo, Egypt