

Abdullah Saad Alharbi

Data & AI Engineer

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Data & AI Engineer working at the intersection of Data, System Design, DevOps, and AI. Building data platforms, AI products, and large-scale systems.

Experience

Data & AI Engineer at Ministry of Defence – Executive Affairs Jun 2025 - Present

- Focusing on Data and AI initiatives.

Data Engineer at Decision Support Center (DSC) - Royal Court Feb 2024 - Jun 2025

- Built a self-service analytics platform enabling researchers and analysts to access authorized data independently. Owned all data infrastructure: database, warehouse, ETL pipelines, and BI layer.
- Built a Medallion architecture (Bronze/Silver/Gold) with Kimball-style data warehouse, data marts, and API integrations.
 - **Skills:** Self-service analytics, data architecture, data modeling (Medallion, Kimball), ETL.
 - **Tools:** Alteryx, SQL Server, Python, Tableau, Azure DevOps, dbt.

Data Engineer at Nortal Jan 2023 - Jan 2024

- **NortalTark**
 - Worked on development and deployment of an enterprise RAG platform offered to government entities across MEA. Contributed to Docker-to-Kubernetes migration, Oracle Cloud Saudi deployment for data sovereignty, and multi-LLM support.
 - **Skills:** RAG, LLM integration, containerization, cloud deployment, sales engineering.
 - **Tools:** FastAPI, Haystack, OpenSearch, Docker, Kubernetes, Azure, Oracle Cloud.
 - **Link:** <https://nortal.com/nortal-tark>
- **Saudi Census**
 - Built ETL backbone for all 8 data warehouse themes for 32M+ population. Delivered data tables and dashboards published on the national census portal.
 - **Skills:** ETL, data warehousing, data modeling, CI/CD.
 - **Tools:** Pentaho, Oracle DB, Tableau, GitLab, Jenkins.
 - **Link:** <https://portal.saudicensus.sa/portal>

Data Engineer at Ministry of Industrial and Mineral Resources Apr 2021 - Dec 2022

- Built ETL backbone integrating 25+ government data sources into a unified 360-degree view of every factory in Saudi Arabia. SSIS for file/database sources, Python for REST API integrations. Designed ODS layer and data quality validation rules.
 - **Skills:** ETL, API integration, data quality, data modeling, data warehousing.
 - **Tools:** SQL Server, SSIS, Python.

Education

• **Minnesota State University, Mankato** Mankato, MN
Bachelor of Management Information Systems Aug 2020

Certifications

- **Certified Data Management Professional (CDMP - DAMA)**

Projects

- **SaudiContext:** Democratize access to Saudi Arabia's open data through a unified platform that ingests, validates, enriches, and serves data via Web UI, MCP, and API interfaces.
 - **Stack:** Python, FastAPI, React, PostgreSQL, DuckDB, Dagster, dbt, Ollama, Docker
- **OpenDMO:** AI agent that automates the full DMO lifecycle with two modes. **Ask:** guides entities through NDMO assessment, strategy, and operating model design. **Act:** connects to databases for profiling, cataloging, and quality checks. Goal is to bridge the gap between one-time consultancy setups and ongoing daily DMO operations.
 - **Stack:** Python, Claude API, MCP, SQLite, Bash, GitHub Actions
- **Cortex:** Enterprise intelligence platform combining BI dashboards, self-service analytics, and AI-powered smart services.
 - **Stack:** Python, FastAPI, React, PostgreSQL, MinIO, Redis, ChromaDB, Superset, Dremio, Docker
 - **Link:** abdullahsaad.dev/projects/cortex
- **Open Data Stack:** Open source data engineering stack with batch and streaming pipelines for end-to-end data processing.
 - **Stack:** Python, Kafka, Spark, Airflow, DuckDB, Pandas, Superset, Docker
 - **Link:** abdullahsaad.dev/projects/open-data-stack
- **Microsoft Data Stack:** End-to-end data engineering solution using Microsoft technologies with automated orchestration.
 - **Stack:** Python, SQL Server, SSIS, Airflow, Superset, PowerBI, Docker
 - **Link:** abdullahsaad.dev/projects/microsoft-data-stack

Skills

- Programming
- Data Architecture & Modeling
- ETL & Data Pipelines
- System Design
- DevOps & Cloud
- AI Engineering