

Alhassan Osman

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PROFILE

Senior Data Scientist with 10+ years of experience delivering advanced analytics, AI solutions, and decision intelligence systems across finance, government, logistics, consulting, and technology environments. Strong expertise in SQL, Python, PySpark, Databricks, Power BI, Tableau, and cloud platforms, with a proven ability to design and optimize ETL/ELT pipelines that transform complex, large-scale datasets into accurate, governed, analytics-ready data assets. Strong expertise in operationalizing machine learning models into production workflows to enable forecasting, risk analysis, anomaly detection, and performance optimization. Deep experience in data quality, reconciliation, auditability, and governance, supporting financial controls and executive decision-making through scalable dashboards and analytics products. Effective stakeholder management and collaboration skills, aligning technical and non-technical teams, and driving delivery through structured communication and iterative execution.

CORE COMPETENCIES

Advanced Analytics & Data Science

- Predictive Modeling, Forecasting, Clustering, Classification
- Statistical Analysis, Hypothesis Testing, Exploratory Data Analysis (EDA)
- Feature Engineering (Transactional & Time-Series Data)

AI & Decision Intelligence Systems

- LLM-Augmented Analytics, Retrieval-Augmented Generation (RAG)
- Agentic Workflows & Conversational Analytics
- Explainable AI & Decision Support Systems

Data Engineering & Architecture

- ETL/ELT Pipelines, Data Modeling, Data Warehousing
- Databricks Lakehouse (Bronze–Silver–Gold Architecture)
- Change Data Capture (CDC), Batch & Distributed Processing
- Data Pipeline Optimization & Performance Tuning
- APIs, Modern Data Ecosystems, Cloud Platforms (Azure, GCP)

Data Quality, Governance & Auditability

- Data Validation, Reconciliation & Anomaly Detection
- Data Lineage, Audit Trails & Traceability

Finance & Risk Analytics

- Financial Data (AR/AP, GL), Revenue & Collections Analytics
- Variance Analysis, Performance Monitoring, Risk Identification
- Financial Controls Aligned with Best Practices

Business Intelligence & Reporting

- Dashboard Development (Power BI, Tableau, SAS Viya, Cognos)
- KPI Design & Performance Metrics Frameworks
- Automated Reporting & Dashboards

Programming & Tools

- SQL, Python, PySpark, SAS
- Databricks, Vertex AI, FAISS, Streamlit
- Version Control & Development: Git, GitHub, CI/CD workflows

Stakeholder Engagement & Delivery

- Translating Business Requirements into Analytical Solutions
- Cross-functional Collaboration (Business, Finance, Engineering)
- UAT Support, Issue Resolution & Iterative Delivery
- Insight Storytelling & Communication to Non-Technical Stakeholders
- Agile, Scrum, Kanban, Waterfall

EXPERIENCE

Founder | Data Scientist & AI Engineer

DataTrust Lab | datatrustlab.ca

Apr 2026 – Present

- Designing AI-powered decision intelligence systems that convert structured and unstructured data into actionable insights using LLMs and advanced analytics
- Building RAG and agent-based workflows to enable conversational analytics and explainable AI for business and financial use cases
- Developing data trust frameworks focused on data quality, validation, lineage, and auditability for high-stakes decision environments
- Prototyping end-to-end ML pipelines, including data ingestion, feature engineering, modeling, and deployment into user-facing workflows
- Architecting scalable solutions using cloud platforms (GCP, Databricks) and API-driven integrations
- Exploring LLM-augmented analytics for anomaly detection, financial insight generation, and automated business rule interpretation

Data Analytics Consultant (Contract)

Government of Nova Scotia | Halifax

Feb 2026 – April 2026

- Design and optimize Databricks Lakehouse pipelines (Bronze–Silver–Gold) using SQL, Python, and PySpark, to transform upstream data into analytics-ready datasets for operational and financial use cases.
- Implement governance and auditing controls, including data quality checks, reconciliation logic, and audit columns (timestamps, lineage, change tracking) to ensure traceability and compliance.
- Debug and enhance pipeline reliability by resolving schema drift, data anomalies, and processing inefficiencies, delivering trusted datasets for downstream users.
- Document business metrics and pipeline logic for both technical and non-technical stakeholders, ensuring a clear, consistent understanding of data outputs.

Key Achievements:

- Built end-to-end Databricks Lakehouse pipelines (Bronze–Silver–Gold) delivering clean, trusted data to Power BI dashboards for operational and financial insights.

Co-Founder | Data Scientist & AI Engineer

Spokesfan Inc. (in collaboration with Vector Institute) | Toronto

May 2025 – Sept 2025

- Integrated Vertex AI embeddings and FAISS for scalable semantic search over customer reviews
- Designed an empathetic chatbot persona powered by Gemini, with slot-filling logic and context-rich dialogue
- Developed a Streamlit frontend with live chat, top-k filtering, and performance logging
- Managed cloud asset pipelines using Google Cloud Storage and implemented latency monitoring for optimization

Key Achievements:

- Built and deployed a scalable RAG-based LLM application with semantic search and a live chat interface on Google Cloud, enabling real-time, personalized product recommendations

Data Scientist

Megillion | Abu Dhabi, UAE

Apr 2024 - Nov 2024

- Built and delivered predictive models using classification and clustering machine learning techniques to support strategic decision-making across departments
- Utilized Pandas, NumPy, and Scikit-learn libraries for data preprocessing, model building, and evaluation
- Developed time series forecasting models and applied optimization strategies to improve operational planning and resource allocation
- Created compelling visualizations using Seaborn and Matplotlib to communicate model performance, trends, and insights to both technical and non-technical stakeholders

- Leveraged SAS Viya for advanced analytics and interactive dashboards, enabling real-time exploration of business metrics and KPIs

Key Achievements:

- Reduced project completion time by 11% (from 9 Months to 8 Months) through effective task prioritization and collaborative workflow management; recognized for consistently meeting deadlines

Finance & Operations Manager

Mrsooli | Khartoum, Sudan

Sep 2021 - Aug 2023

- Led financial and operational workflows with a focus on integrating data-driven strategies to improve team efficiency and reporting accuracy
- Used SQL and Python to analyze financial trends, build forecasting models, and automate recurring tasks
- Designed interactive dashboards in Power BI to visualize performance metrics and support strategic decision-making
- Applied advanced Excel techniques, such as pivot tables, nested formulas, and Power Query, to streamline financial modeling and reporting
- Managed collaborative reporting and documentation through Google Suite, ensuring version control and seamless communication across departments.

Key Achievements:

- Reduced manual reporting tasks by 40% (from 5 hours to 3 hours) by streamlining data pipelines and automating key processes
- Developed dashboards that highlighted operational bottlenecks, enabling faster response and resource reallocation

IT Consultant

Freelancer | Khartoum, Sudan

Jan 2016 - Sep 2021

- Delivered tailored IT consulting services across hardware, software, networking, and systems management, helping clients resolve technical challenges and improve operational workflows
- Assessed client needs and developed customized solutions that enhanced productivity and streamlined internal processes
- Provided hands-on troubleshooting and support for a wide range of technical issues, ensuring minimal disruption and consistent system performance
- Used Advanced Excel to build internal reporting tools that tracked service requests, system uptime, and resource allocation
- Created dynamic spreadsheets with pivot tables, lookup functions, and automated calculations to support internal audits and performance reviews

Key Achievements:

- Reduced system downtime through proactive maintenance planning and rapid issue resolution, improving reliability across client systems
- Improved internal reporting accuracy and speed by implementing Excel-based templates, enabling faster insights and more informed decision-making

Billing & Pricing Manager

DHL Worldwide Express Sudan Branch | Khartoum, Sudan

Jan 2010 - Jan 2016

- Directed the daily operations of the Billing and Pricing department, overseeing invoice issuance, customer account management, and financial reporting. Ensured timely and accurate communication of financial status to the Country Manager through structured reporting and analysis
- Managed all aspects of the pricing function, including the planning and execution of General Price Increases (GPI). Coordinated closely with the sales department to ensure pricing updates were clearly communicated and implemented without disruption
- Developed and rolled out strategic initiatives aimed at preventing revenue leakage, including tighter controls on billing accuracy, payment tracking, and reconciliation processes

- Led cross-functional collaboration between finance, operations, and sales to align pricing strategies with market conditions and customer expectations
- Maintained high standards of financial integrity by implementing checks and balances across billing workflows, ensuring compliance and transparency in all transactions
- Used Advanced Excel to build dynamic pricing models, automate invoice tracking, and generate financial summaries that supported executive decision-making

Key Achievements:

- Successfully reduced revenue leakage to zero percent through proactive monitoring, streamlined billing procedures, and improved payment follow-up systems
- Recognized for driving measurable improvements in financial transparency and contributing to stronger client trust and satisfaction

EDUCATION

Master of Science in Computer Science (Software Engineering) The Future University Khartoum, Sudan	Oct 2018
Master of Business Administration (Project Management) Sudan International University Khartoum, Sudan	May 2014
Bachelor of Engineering in Electronic Engineering (Communication) Sudan University of Science and Technology Khartoum, Sudan	May 2007

CERTIFICATIONS

Building Canadian Environment Competencies for Engineering Immigrant Services Association of Nova Scotia Nova Scotia, Canada	Apr 2026
Junior Data Analyst Program NPower Canada Nova Scotia, Canada	Mar 2026
IBM Data Analyst IBM Skills Network Coursera	Feb 2026
Microsoft Certified: Azure AI Fundamentals Microsoft	Jan 2026
QuickBooks Immigrant Services Association of Nova Scotia Nova Scotia, Canada	Dec 2025
Data Readiness, Model Development, and Model Deployment (DaRMoD) VECTOR INSTITUTE – Toronto	Sep 2025
Applied AI & No-Code Product Development Program WIL Co.Lab Riipen Atlia https://app.verified.io/certificate/applied-ai-nocode-product-development-4801510	Aug 2025
Project Management Halifax Chamber of Commerce Workplace Education – Nova Scotia	Mar 2025
Certified Data Scientist DataCamp Inc. https://www.datacamp.com/certificate/DS0024492184721	Oct 2024
Information Technology Professional (ITP) ICTC - CTIC Immigration, Refugees, and Citizenship Canada	Aug 2024