

Mohamed Saad Eldin Elmansy

Consultant & Trainer • Senior Data Scientist → AI/ML for Compliance | PMO & Governance | Project Management | Digital Transformation & O&M | Risk & Fraud Analytics | Data-Driven Strategy | GenAI & MLOps | Python • BI • Cloud

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Profile Summary

A Consultant and Senior data scientist with 14+ years of international experience delivering large-scale PMO operations, donor-funded development programs, and AI-driven transformation projects across Egypt, Saudi Arabia, UAE, and Oman. I bring a proven record in EU, USAID, GIZ, KfW, and VNG projects, delivering impact in utilities, economic growth, infrastructure modernization, and sustainability. Skilled in policy dialogue, contract management, KPI frameworks, and stakeholder engagement, I align government, private sector, and financial institutions around actionable strategies. As a Senior Data Scientist, I leverage Python, cloud analytics, GenAI, and explainable AI (XAI) to design and deploy LLM-powered tools, intelligent dashboards, and compliance automation systems, enabling organizations to accelerate reporting, optimize decision-making, and achieve measurable efficiency gains. I have delivered over 1,700 hours of professional training, led cross-functional stakeholder workshops, and overseen digital transformation programs that integrate governance, compliance, and data strategy. Currently pursuing an Executive MBA (Cardiff Institute, UK), I specialize in bridging policy, finance, and technology to foster public-private partnerships and drive sustainable, innovation growth under the Global Gateway framework.

Key Skills

- Project Management & Governance: PMO Processes, Contract Management, KPI Tracking, Scope & Budget Control, Stakeholder Engagement, Risk Mitigation, Agile Delivery.
- Data Engineering & Big Data: Cloudera CDP (HDFS, Hive, Impala, Oozie), Apache Spark, PySpark, Informatica DEI/EDC (PowerCenter-equivalent), Apache Airflow, Kafka, On-premise architecture, Data Contracts, ETL pipelines, Data Modeling.
- Programming & Automation: Python (Pandas, NumPy, Scikit-learn), SQL, PySpark, RESTful APIs, Workflow Automation, Git, API Integration, Data Quality Scripts.
- Cloud & Infrastructure: AWS, Azure, GCP, CDC, On-premise deployment, DataOps, CI/CD, Cloud-to-OnPrem Integration.
- Machine Learning & Analytics: Regression, Classification, Clustering, Forecasting, Model Deployment, MLOps Collaboration, Explainable AI (XAI), Feature Store Design, Model Monitoring, Prompt Engineering, LangGraph.
- BI & Dashboards: Power BI (DAX, Dataflows), Tableau, Rationalization, KPI Automation, Operational & Legal Analytics.
- Software Development & Architecture: Python, Django, PHP, JavaScript (React/Node.js), SQL & NoSQL Databases
- Mobile & Frontend: Flutter/dart, HTML/CSS, UI/UX integration.
- Governance & Ethics: Responsible AI, Data Contracts, Data Privacy, Compliance Management, Blockchain for Finance, Metadata Governance, Audit-Ready Pipelines.
- Domain Expertise: SCADA, GIS, NRW Control, DMA Zoning, Utility Infrastructure Analytics, Contracts Evaluation.
- Leadership & Delivery: Technical Mentorship, Stakeholder Engagement, AI-Driven HR, ChatGPT Business Use, Innovation Management, Cross-Functional Collaboration, Agile Delivery, O&M Strategy, 1700+ Hours of Technical Training.

Experience

Freelancing

Data Scientist & Analyst & Trainer, Online and Onsite

2020–Present

- Developed interactive KPIs dashboards that improved executive decision-making speed by 30%.
- Designed and deployed predictive models for pricing, targeting, and risk analytics, enabling data-driven strategies comparable to credit scoring and fraud detection in financial services.
- Built end-to-end ML pipelines with ROI tracking, compliance monitoring, and KPI-driven governance frameworks—directly applicable to banking risk and regulatory reporting.
- Collaborated with cross-functional stakeholders to translate complex financial and operational data into actionable business strategies.
- Created Python, SQL, and API-based analytics pipelines to automate reporting and regulatory compliance workflows, ensuring accuracy and audit readiness.
- Trained and mentored 5000+ professionals in statistical modeling, financial data analysis, and Python-based machine learning.

- Partnered with product managers and data engineers to deploy scalable AI/ML solutions aligned with business objectives in industries.
- Designed monitoring and compliance systems integrating KPIs, procurement tracking, and governance frameworks—parallels to banking compliance, AML, and Basel-driven risk management systems.

Software Engineer, Global / Remote

2010–Present

- Developed and maintained full-stack web platforms using Django, WordPress, Joomla, PHP, JavaScript, and SQL, ensuring secure, scalable, and high-performance applications.
- Designed and implemented RESTful APIs in Django and Python to enable smooth integration between backend and frontend.
- Optimized relational databases (MySQL/PostgreSQL) for performance, integrity, and security, including schema design, indexing, and query optimization.
- Collaborated with clients to translate requirements into technical solutions, improving delivery speed and system reliability.
- Implemented AI-powered modules that increased user engagement by up to 40%.
- Managed full-stack IT environments, including server deployment, version control (Git), and application performance monitoring for small-to-medium clients.

Consultant - National Water Company (NWC), Riyadh, Saudi Arabia

2024–2025

- Managed financial aspects of nationwide O&M contracts, ensuring SLA compliance, benchmarking, and transparent financial reporting.
- Designed and implemented contract evaluation and scoring systems supporting procurement, cost optimization, and risk mitigation.
- Established compliance frameworks for financial reporting, tax obligations, and audit readiness, aligning with regulatory requirements.
- Developed automated dashboards and analytics for contract performance, vendor payments, and FKPIs, accelerating reporting by 40%.
- Built AI-driven pipelines for cost deviation detection and financial risk modeling, strengthening governance and accountability.
- Led contract management and evaluation frameworks across nationwide O&M programs, developing scoring models, KPI-based dashboards, and SLA compliance systems used for vendor performance benchmarking.
- Negotiated with contractors and internal stakeholders to ensure alignment with contractual obligations and accelerating approvals by 25%.
- Deployed AI solutions for predictive maintenance, increasing asset uptime by 22%.
- Built centralized data platforms and automated KPI dashboards, SLA benchmarking tools, and operational and legal analytics visualizations, improving reporting speed by 40%.
- Established PMO processes for governance, compliance reporting, and executive dashboards, ensuring transparency and alignment with strategic objectives.
- Designed contract evaluation tools (spider charts, scoring models) used across the kingdom.
- Developed RESTful APIs for secure data exchange and automation workflows.
- Ensured analytics delivery aligned with data privacy regulations and client-sensitive data standards across regulated domains.
- Developed ETL pipelines using Informatica DEI/EDC for metadata management and data lineage in compliance environments.
- Built and deployed LLM-based agents using Langchain for automated KPI generation.
- Trained 100+ staff on O&M workflows, KPI-driven contract evaluation, tax reporting, and data governance compliance.
- Enabled AI-driven pipelines for predictive asset risk modeling and cost deviation detection.
- Launched a stakeholder-friendly web system for O&M data sharing and tracking.

Senior NRW Engineer, Holding Company for Water and Waste Water, Egypt

2016–2024

- Led data-driven utility optimization strategy using analytics and anomaly detection, achieving a 30% performance gain.
- Executed DMA & DMZ rollout, integrating GIS, SCADA, and field data into real-time dashboards.
- Created Excel/Python tools for anomaly detection, cutting manual processing time by 50%.
- Delivered over 40 training sessions on NRW analytics and operational KPIs.
- Oversaw procurement, contract compliance, and donor reporting for international programs, ensuring projects met governance and performance standards.

O&M – NRW Engineer, Greater Cairo & Damietta Water Companies

2011–2016

- Led field operations for leakage detection, SCADA-integrated meter calibration, and preventive maintenance; supervised teams on pump installation, valve testing, and asset upgrades including STP pipelines.
- Define DMA zones and build HA/GIS models; delivered field training on advanced leakage detection tools and diagnostics.

Highlighted Training Courses Delivered

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- Certified Professional Office Administration - Onsite, Oman (2025) – Enhance the skills of digital transformation in office management.
 - AI-Powered Presentations – Ministry of Transport, Onsite, Oman (2025) – Enabled 20+ professionals to cut design time by 50% using AI tools, improving clarity and audience impact.

- Data Mining – *Online, KSA (2024)* - Empowered 60+ attendees in pattern discovery and clustering; 90% reported boosted trend.
- Applied Statistics & Data Analysis (KAUST) – *Online, KSA (2024)* - Achieved 85% improvement in participants' Python-based statistical accuracy on real datasets.
- Power BI for Data Analysis – *Onsite, Oman (2024)* - Guided through building dynamic dashboards; 100% achieved hands-on project delivery.
- Statistical Reporting with Excel – Royal Oman Police, *Onsite, Oman (2024)* - Enhanced report quality across 4 departments; reduced errors by 30% through structured Excel analysis.
- Data Visualization with Tableau – *Nama Company, Onsite, Oman (2023)* - Boosted data storytelling skills for 25+ staff; 75% demonstrated improved insight extraction.
- Advanced Power BI Techniques – *Online, KSA (2023)* - Elevated DAX, modeling capabilities; 80% applied solutions to BD.
- Advanced AI Applications – *Online, KSA (2023)* - Delivered hands-on ML model training; engineers reached 90%+ real-time.
- Infographic Design Fundamentals – *Online, UAE (2022)* - Transformed complex data into visuals; improved by 60%.
- Design Thinking for Visualization – *Online, KSA (2022)* - Led a 3-day workshop yielding user-centered dashboards.
- Creative Data Interpretation with Python – *Online, KSA (2021)* - Taught matplotlib & seaborn techniques; 95% of participants applied skills immediately in their roles.

Highlighted Projects

- O&M Contracts Bundling System – NWC, Saudi Arabia (2024) Developed and implemented O&M Contracts Bundling System, enabling structured procurement, performance monitoring, and compliance across nationwide contracts.
- Road Safety Dashboard – KAUST, Saudi Arabia (2024) – Reduced Road incidents by 15%.
- Online Ordering System – Hull, UK (2024) – Improved order efficiency by 30% and cut wait times 25%.
- NRW Reduction Phase – VNG, Egypt (2023–2024) – Lowered NRW by 25% through AI-based monitoring.
- NRW Program – USAID, Egypt (2019–2024) – Achieved 30% reduction in NRW via smart technologies.
- DMA Establishment – GIZ, Egypt (2018–2024) - Cut water loss by 15% through DMA zoning.
- Technical Support – EU, Egypt (2019–2023) – Enabled 20% NRW reduction by optimizing daily O&M practices.
- AI E-Commerce Platform – Canada (2023) – Boosted sales by 40% using predictive telecom-scale data Model.
- YOLO Person Detection – RMIT, Australia (2022) – Built real-time detection system achieving high accuracy.
- NRW Feasibility Study – EU, Egypt (2019–2022) – Delivered insights that shaped Egypt's national NRW strategy.
- DMA Monitoring – KFW/Dorsch, Egypt (2019–2020) – Reduced NRW by 20% through smart DMAs.
- Network Strategy Development – EU, Egypt (2015–2017) – Reduced NRW by 10%.

Highlighted Certifications and Professional Training

- Programming with Python | OpenEDG Python Institute, 2025
- AI for Managers - Microsoft Azure AI Essentials | Microsoft, 2025
- Data Engineering Foundations | Professional Astronomer, 2025
- Data Science Professional | KNIME, 2025
- Data Science | Artificial Intelligence Career Essentials | ALX Africa, 2024 - 2025
- Artificial Intelligence Fundamentals & Artificial Intelligence Fundamentals with Capstone Project | IBM, 2025
- Big Data Foundations – Data Fundamentals - Hadoop Foundations | IBM, 2025
- Data Visualization Using Python IBM, 2025
- Modern AI Cisco Networking Academy, 2025
- Python for Data Science | IBM, 2025
- Data Science & Analytics | HP LIFE, 2024
- Software Engineer – HackerRank, 2025
- AI for Everyone – Cisco, 2025.
- Data Science Specialization – IBM, 2025.
- PMP Exam Preparation – PM-Tricks, KSA, 2024.
- Project Management Foundations, IBM, 2025
- Sustainable Water Services – Netherlands, 2023.
- NRW & Leakage Control (B) – Japan, Fuji TECOM, 2017.
- Water Plant & Network Operation / Chlorine Safety Training – Egypt, 2018.
- Electrical Systems Training (Cables, Motors, Transformers) – Egypt, 2012–2014.
- Water Meter Installation & Calibration – Egypt, 2012.

Education

- Executive MBA (in progress) – Cardiff Institute, UK (Expected 2025).
- B.Sc. in Electronics & Communication Engineering – Cairo University (2010).

Languages

- Arabic (Native). | English (Fluent).

MEMBERSHIPS

- Saudi Council of Engineers – Professional Engineer. | Egyptian Engineers Syndicate – Certified Engineer. | Alex Africa - Membership