Moustafa Mahmoud
UK Exceptional Talent

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Working Experience

Solution Architect, Millennium, UK — Sep 2023 – Present

- **Cloud Platform and Application Development**: Led the design and maintenance of cloud components and GenAI applications, boosting operational efficiency and platform scalability.
- **AI-Enhanced Productivity Tools**: Innovated AI-driven development tools, significantly reducing time-to-market and enhancing developer productivity.
- **Comprehensive Cloud Solutions**: Expertly architected and maintained multi-cloud solutions across AWS and Google Cloud, enhancing market reach and customer satisfaction.
- **CI/CD and Monitoring Implementation**: Implemented CI/CD pipelines and monitoring systems, improving deployment efficiency and system reliability.
- **Data Management and Automation**: Automated data resiliency and container management processes, securing data integrity and reducing setup times.
- **Cloud Cost Optimization**: Successfully consulted on cloud cost reduction strategies, achieving substantial savings in cloud expenses and optimizing architectural efficiency.

Senior Solution Architect, AWS, UK — Aug 2021 – Aug 2023

- Working directly with AWS customers to implement strategic data and ML initiatives from pre-sales validation and customer upskilling to architectural design, hands-on technical solutioning, coding, and go-live strategies. Accelerate customer success in architecture, development, and deployment of cloud database, analytics, and machine learning solutions.
- Work alongside customers to build data management platforms using Amazon Elastic Map Reduce (EMR), Amazon Redshift, Amazon Kinesis, Amazon Machine Learning services (inc. Amazon SageMaker), Amazon Athena, AWS LakeFormation, Amazon S3, AWS Glue, Amazon DynamoDB, Amazon NeptuneDB, and Amazon Relational Database Service (RDS).
- Accelerate enterprise customers migration from a monolithic Data Lake to a Distributed Data Mesh.
- Interfacing directly with AWS service teams (e.g., S3, Glue, Rekognition, SageMaker, Glue Databrew) to improve services, add customer requested features, and resolve issues.
- Delivering service first-call decks and leading deep dive discussions with diverse customers ranging from frontline builders to C-suite executives as part of the DataOps Technical Field Community.
- Lead the creation of the Data Lab DataOps domain coordinating an international team to develop internal and external technical thought leadership content, performing business development and pipeline management, and working with our customers to implement novel DataOps architectures focusing on the pillars of CI/CD, data quality, and data observability.

Publishing:
- **AWS Blog Post**: Land data from databases to a data lake at scale using AWS Glue blueprints AWS Blog, Github Code.
- **AWS Glue Service Contributions**:
  - Helped in the development and testing for AWS Glue native integration with Apache Hudi 0.12.0.
  - Contributed to AWS Glue service product by adding Apache Hudi Connector 0.10.1 for AWS Glue in Amazon marketplace: product link, and announcement post.

Senior Data Engineer, Onfido, UK — Sep 2020 – Aug 2021

- Building efficient and reliable data pipelines, ingest and transform data sets using AWS services (S3, Glue, Spark, DMS, Redshift, and Athena).
- Migration of the Extraction Layer from batch processing to near real-time using Terraform, DMS CDC and AWS Glue solution (utilizing AWS Spectrum), reducing the overall delivery time of raw data from 1 hour to 5 minutes.
- Working alongside Machine Learning team to help with MLOps alongside building data pipeline services for the wider development organisation, providing a one-stop-shop for the analytics services.

- Onboarding new team members to become productive as soon as possible, through both presentations, as well as pair programming.

Senior Big Data Engineer, EPAM Systems, Poland   Oct 2018 – Sep 2020

- Building and Maintaining Big Data Platform for EPAM's customers.
- Developing Machine Learning Models for our customers to support the business decisions.
- Consulting our customers about the best practices for Big Data Engineering.
- Developing Batch and Stream Big Data Jobs using Kafka, Spark and Hadoop.
- Analyze business requirements and designed solutions for Big data and Analytics projects.
- Helping our customers to build Big Data pipeline and support their production environments using Dev-Ops tools such as Jenkins, Docker, Git, Artifactory

Senior Big Data Analytics Engineer, Etisalat, UAE   May 2016 – Sep 2018

- I was the first member of Big data team at Etisalat UAE and helped in designing and building the big data platform and grow the team.
- Lead the development team of the Big Data and Analytics department.
- Helped to scale the team from 2 members to 18 members.
- Responsible for designing all of Etisalat's Big Data jobs for ETL and Aggregations.
- Analyzed business requirements and designed solutions for big data and analytics projects.

Projects:
- **Big Data Integration**: Built a Real Time Marketing (RTM) framework enabling Etisalat to tap on telecoms data sources, providing real time marketing use-cases and projects for customers, both individual and corporate, who have employed our Big Data platform capabilities (IBM Streams, PIG, Oozie, Hive, and Spark).

- **Customer Happiness Index**: Developed statistical model for calculating the customer happiness index based on the customers' interactions with Etisalat's systems which allow the business to understand the customer behaviour and increase customer satisfactions by 10% using the model report. (Hadoop, R, Spark,Scala, and Hive).

- **SIMBOX Fraud Detection**: Developed a machine learning model to detect the pattern SIMBOX fraud activities. Fraudulent SIM Boxes hijack international voice calls and transfer them over the Internet to a cellular device, which injects them back into the cellular network in the destination country as a local call. This model increase the customer fraud detection to be from 60% to be more than 92% (Spark, SPSS and R).

Data Analyst, Etisalat Egypt   Feb 2015 – Apr 2016

- Provide data and analysis needed for Business Intelligence and Reporting Team members.
- Design and develop ETL processes and reports serving complicated transformation and data cleansing logic.
- Respond to business needs and translate into specifications (requirements gathering).
- Performing analytics and reconciliation activities
- Automation of daily, weekly, and monthly ETL processes.
- Ensuring data availability for business operational reporting purpose.

Projects:
- **Location Update**: Perform streaming data processing for customers' locations updates and handle online campaign to customers (Hadoop, Hive, Storm, and Java).

- **Geo RF**: Geographical Dashboard for Radio Frequency team in Etisalat Egypt to review the Network and its details including (Sites, Sectors and Cells 2/3G) responsible for data extraction, cleansing, analysis, and data quality development.

- **Geo Marketing**: Geographical Dashboard for Marketing team in Etisalat Egypt to review the customer activities including usage, locations, recharge per area, and network activity such as dropped calls; responsible for data integration, analysis, and BI reports.

Solution Developer, Mobiserve, Egypt   Dec 2013 – Dec 2014
- Web and Desktop Solution Developer.
- Business requirements analysis and gathering.
- Understanding of reporting structures and layouts using various enterprise reporting tools.

- Working into automate the CRM and Delivery cycle End-to-End.

Solution Developer, Karizma, Egypt June 2013 − Dec 2013
- Web Application developer.
- Design and handle database operations for our developed systems.

Undergraduate Research Student, HCILAB June 2011 - Aug 2012
Supervisor: **Dr. Ayman Ezzat**
- Developed a new technique to interact with a big display screen using laser pointers. This technique helps to make the interaction easy and natural for similar use cases.
- Designed an algorithm that detects circle gesture and gesture inside the circle such as line gesture.

Education

- **M.Sc. in Computer Science, Nile University**, Sep 2014 - Mar 2019
  - Major: Deep Learning
  - Thesis: **Learning Meters of Arabic Poems with Deep Learning**
  - Publication: Waleed A. Yousefa, Omar M. Ibrahimea, Taha M. Madboulya, Moustafa A. Mahmouda, Ali H. El-Kassasa, Ali O. Hassana, Abdallah R. Albohya, Ahmed A. Abouelkahire, **Learning meters of Arabic and English poems with Recurrent Neural Networks: a step forward for language understanding and synthesis**
- Diploma, Big Data & Data Science, Nile University, Oct 2015 - July 2016
- B.Sc of Science in Computer Science, Faculty of Computers Sep 2009 - May 2013
  and Information Systems, Helwan University,

Technical Skills

Programming Languages and Technologies:
- Big Data Development (Hadoop, Spark, Kafka, Map-Reduce, Pig, Hive, Sqoop and Oozie).
- Scala, Python, R, Java, Shell Programming, Matlab, Mathematica, Latex.
- Dev-Ops Tools (Terraform, CloudFormation, Jenkins, Docker, Git).
- DBMS: Teradata, Netezza, Oracle, MySQL.
- Enterprise ETL Tools: IBM Data Stage, Talend.
- Cloud Technologies: AWS.

Certifications

- **AWS Certified Solutions Architect - Associate** : SAA-C02

Extracurricular Activities

- **Dec 2019 - Present**: Online instructor provides online courses in different topics such as Data warehouse, Big Data, Scala, Spark, and Distributed Systems. YouTube Channel
- **Sep 2015 - Present**: Co-founder of the Egyptian AI & Big Data Geeks facebook group
- **Sep 2015 - Present**: Speaker at Big Data Meetups in Cairo, Talk about several Data Science and Big Data topics such as Hadoop platform architecture, Big Data eco-systems and Data Science with R session videos.

Achievements

- Best Employee of the Month 2 times at Etisalat (May-2017, Jan-2018).
- Best project award in Etisalat group: Real Time Marketing (RTM) project in 2017.