

# ESLAM HUSSIEN ABUELELLA

GIS Consultant | Data Scientist | Azure Certified Professional

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## SUMMARY

Geospatial Data Scientist and GIS Consultant with 8+ years of experience delivering spatial and data-driven solutions across government, energy, and infrastructure sectors. Currently completing an MSc in Data Science with strong expertise in Python, SQL, machine learning, and spatial analytics. Proven track record in automating geospatial pipelines, deploying ArcGIS Enterprise and Azure solutions, and translating complex spatial data into actionable business insights.

## PROFESSIONAL EXPERIENCE

- **Enterprise GIS Manager | Alcis Geo | Guildford, UK | Jul 2023 - Apr 2025**
  - Designed and applied deep learning-based computer vision models for object detection and mapping using satellite imagery.
  - Developed scalable geospatial analytics pipelines for an early warning system to support large-area monitoring and spatial intelligence use cases.
  - Led automation of geospatial data processing and analysis using Python and SQL, reducing manual effort by 40%
  - Designed and maintained scalable ArcGIS Enterprise & Azure-based solutions with optimised data models, decreasing the data storage redundancy by 50%
  - Designed and deployed advanced spatial analytics solutions using FME, custom ETL, ArcGIS, and Python notebooks to uncover 3 new business opportunities
  - Collaborated and mentored a team of 5 GIS analysts in data science & AI approaches, visualisation, and reproducible advanced analytics workflows
- **Senior GIS Solutions Engineer | Quality Standard Information Technology (formerly Esri Northeast Africa) | Cairo, Egypt | Jan 2020 - Jun 2023**
  - Delivered enterprise GIS solutions integrating ArcGIS, relational databases (RDBMS), and hybrid on-premise and cloud infrastructure for over 27 sites across Egypt and the Middle East
  - Customised GIS and data workflows using Python and APIs to support automated data integration across Esri COTS, custom solutions, and third-party systems (e.g., SAP), increasing efficiency by 60%
  - Processed and analysed satellite imagery and geospatial datasets using advanced remote sensing techniques to extract land-use, environmental change detection, crop classification, and topographic insights across 4 contrasting locations in Egypt
  - Conducted over 16 training programmes and provided daily on-site technical support to clients across various sectors, including Security, Government, Oil & Gas, Natural Resources, Utilities, NGOs
- **GIS Technical Support | Penta-b | Cairo, Egypt | Jan 2018 - Dec 2019**
  - Delivered over 10 GIS and mapping projects across Utility, Land management, Property protection, Agriculture, and NGOs sectors
  - Implemented more than 10 GIS solutions via open-source platforms (QGIS, GeoServer, PostGIS).
  - Ensured accuracy, completeness, and quality assurance for field-collected datasets that supported 6 deep learning and geospatial projects, improving model reliability

## EDUCATION

**MSc Data Science | Coventry University | United Kingdom** | Expected May 2026 | (predicted 80%)

**MSc Geology | Cairo University | Egypt** | Jan 2022 | Thesis: Geological Mapping Using Geophysical & Remote Sensing Techniques | 83%

**BSc Geoscience | Cairo University | Egypt** | Jun 2014 | Graduation Project: Reservoir Static Model | 70%

## SELECTED DATA SCIENCE PROJECTS

- **Seismic Event Classification (Low-Magnitude Events)**

*Python | scikit-learn | Imbalanced-learn | USGS Seismic Catalogue*

GitHub: <https://github.com/eslamhussienabuelella/seismic-event-classification-low-magnitude>

- **CO<sub>2</sub> Emissions Analysis of Canadian Vehicles (1995–2023)**

*PySpark | Big Data Analytics | Regression | Tableau*

GitHub: <https://github.com/eslamhussienabuelella/co2-canada-vehicles-pyspark>

- **Global Life-Work Balance Index – Multivariate Analysis**

*R | PCA | Multivariate Statistics | Data Visualisation*

GitHub: <https://github.com/eslamhussienabuelella/pca-life-work-balance-r>

## CERTIFICATIONS

- NoSQL, Big Data, and Spark Foundations Specialization | IBM | COURSERA | 2026 (In progress)
- Machine Learning Professional Certificate | IBM | COURSERA | 2026 (In progress)
- Data Science Professional Certificate | IBM | COURSERA | 2025
- Data Analyst Professional Certificate | IBM | COURSERA | 2025
- Microsoft Azure Administrator Associate | Microsoft | 2025
- Microsoft Azure Fundamentals | Microsoft | 2024
- GIS Specialization | UC Davis, California | COURSERA | 2016

## CORE SKILLS

- **Programming & Analytics:** Python, R, SQL, Pandas, NumPy, Scikit-learn, Matplotlib, Seaborn, PySpark, Keras, TensorFlow
- **Geospatial Analytics:** ArcGIS Pro, ArcGIS Enterprise, QGIS, PostGIS, Remote Sensing
- **Machine Learning:** Regression, Classification, Clustering, PCA, Model Evaluation
- **Data Engineering:** FME Workbench, Data Wrangling, Feature Engineering, EDA, Data Cleaning
- **Visualisation:** Tableau, ArcGIS Dashboards, ArcGIS Insights, Folium
- **Database:** SQL Server, PostgreSQL/PostGIS, MongoDB
- **Cloud:** Microsoft Azure (Administrator Certified), ArcGIS Online
- **Tools:** Jupyter, RStudio, GitHub, VS Code, Spyder

## PUBLICATIONS

- Abdelhalim, A., Abuelella, E., Sakran, S., & Said, S. (2023). Implementation of spaceborne optical data and field investigation for geo-structural mapping of an interior rift basin: A case study from Kharit area, Southeastern Desert, Egypt. *Journal of Mining and Environment*.
- Abuelella, E., Sakran, S., Khalifa, K., & Abdelhalim, A. (2021). Igneous activity around Kharit Basin using remote sensing data analysis, South Eastern Desert, Egypt. *Annals of the Geological Survey of Egypt*, 38, 271–285.

## LANGUAGES

Arabic: Native | English: Proficient