

Sameh Ayman

Senior Geomatics & GIS Specialist · Digital Twins & Mobile Mapping

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Portfolio · view projects ↗

PROFILE

Senior geomatics and GIS specialist with 10+ years in land surveying, GIS, Mobile Mapping Systems, LiDAR and BIM–GIS integration on infrastructure, utility and smart-city projects in Saudi Arabia and Egypt. Combines point clouds, BIM, CAD and underground GPR data into coordinated 3D environments and builds and analyses utility networks for Vision 2030 digital-transformation goals. BIM-to-GIS digital twin work presented at the FIG Working Week (South Africa).

10+	KSA · EG	SCE	FIG
years in geomatics	project experience	GIS specialist	work presented

EXPERIENCE

Mobile Mapping System Expert
Jan 2025 — Present

Alqotr Engineering Consulting Company · Saudi Arabia

- Integrated BIM, CAD, point cloud and GPR data into a coordinated 3D city model (digital twin) for visualisation and clash analysis.
- Mobile mapping capture with Trimble MX; feature extraction and QC in TBC, TopoDOT, Orbit and MicroStation.
- Produced the 3D visuals presented at the FIG Working Week, South Africa; coordinate QC with field teams.

GIS Analyst
Aug 2022 — Jan 2025

AJC Information Technology Company · Saudi Arabia

- Led GIS design and analysis of electricity distribution networks for digital transformation projects; built and validated water network GIS.
- Operated MMS and processed LiDAR into DTM/DEM, topographic maps and contours.
- Linked AutoCAD drawings to GIS databases, including cadastral boundary work and official property survey reports.

GIS Lecturer
Oct 2023 — Jan 2025

Maadi International Academy (MIA)

- Taught GIS theory and hands-on ArcGIS and Google Earth Pro; wrote course material and mentored students.

GIS Specialist & GIS Analyst
Jun 2021 — Apr 2022

Edge Pro · Afaq Management Consulting · Freelance

- Remote sensing and GIS for agricultural resources (ERDAS Imagine, GeoMedia); GIS server management; environmental mapping and route selection.

Survey Specialist & Quantity Surveyor
Sep 2019 — May 2021

Al Noor Company · Egypt

- Directed surveying operations, the technical office, quantity surveying and cost estimates for construction projects.

Survey Specialist & Survey Consultant
Jul 2016 — Aug 2019

Seif Surveying Office · Capital AIC · Edmo and others · Egypt

- Road, infrastructure and construction surveying, including Asyut Western Road, Abu Zenima–Gharandal Road and King Salman University networks.

EXPERTISE

3D GIS & digital twins
BIM–GIS integration, 3D city models, clash checks

Mobile mapping & LiDAR
Capture, classification, feature extraction, QC

Surveying & terrain
GNSS, total station, DTM/DEM, contours, volumes

GIS & utility networks
Geodatabases, topology, network analysis

CAD ↔ GIS & cadastre
Drawings, property surveys, boundary reports

Remote sensing & UAV
Classification, change detection, photogrammetry

TOOLS

ArcGIS Pro · ArcMap · ArcScene · Civil 3D · AutoCAD · Trimble MX · TBC · TopoDOT · Orbit 3D · MicroStation · Global Mapper · GeoMedia · ERDAS Imagine · Metashape · PostgreSQL · SQL Server · Python · GNSS · Total station · Excel

EDUCATION & CREDENTIALS

Remote Pilot Certificate (Drone)
GACA Saudi Arabia · Open · 2026

Saudi Council of Engineers
Member · classified GIS Specialist

Project Management Institute
Member · PMP candidate · PMP Diploma (2025)

Diploma in GIS
Ain Shams University · 2022

B.A. Geography
Zagazig University · 2016

Advanced LiDAR & 3D Point Cloud
3D Tricks · 2025

TOT Diploma
Training of Trainers · Effective Leaders Diploma

LANGUAGES

Arabic (native) · English

Selected projects

Extracts from the online portfolio

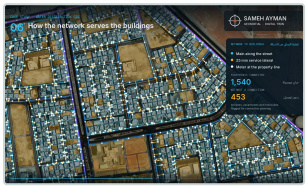
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DIGITAL TWIN · 3D GIS · ALQOTR

3D city model & digital twin integration

Mobile-mapping point clouds, BIM models, CAD and underground GPR utilities combined in one coordinated 3D environment, used to see above- and below-ground assets together and check conflicts. Presented at the FIG Working Week.



UTILITY GIS · WATER

Water distribution networks

44 km of mains (75–400 mm) built to engineering rules with automated connections; topology validated (2,672 checks), 1,020 junctions, hydrant coverage analysis with 36 proposed sites, and valve-isolation scenarios that keep the rest of the network supplied.



UTILITY GIS · ELECTRICITY

Electricity distribution GIS

1,038 feeders, substations, RMUs and 2,551 distribution boxes; rule-based QC, 307 MVA capacity and utilisation analysis, 166 service areas, and outage scenarios with load transfer to neighbouring substations.



CIVIL 3D · QUANTITIES · WORKFLOW PROJECT

Hillside earthworks, survey to BOQ

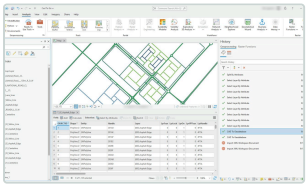
Coded survey to EG TIN, contours, slope and drainage analysis, platform and access-road design, cross sections and volumes reconciled by surface and average-end-area methods, issued as a ten-sheet drawing set with a bill of quantities.



TOPOGRAPHY · 3D GIS · RIYADH

3D topographic GIS for a major Riyadh development

Led the conversion of survey and CAD data into one 3D geodatabase across three zones and a boulevard: 193,963 features in 39 layers with X, Y and Z, from spot levels and buildings to kerbs, trees, manholes and water assets.



GIS MAPPING · IMAGERY

Roads, parcels, imagery & spatial analysis

Road networks, lanes, parcels and buildings digitised over satellite imagery in ArcMap / ArcGIS Pro, with buffers, overlays and quality checks against the imagery.



FIELD SURVEY · PROPERTY

Field surveying & property survey reports

GNSS and total-station surveys, control points and spot levels; official property survey reports and boundary decisions prepared for submission.