

MOHAMMED ALMARWAI

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Summary

Geomatics Engineer with a solid foundation in GIS, remote sensing, surveying, and Photogrammetry. Eager to contribute to team success through hard work, attention to detail, and strong problem-solving skills. Seeking a career opportunity where I can apply my technical knowledge, hands on training, and passion for geospatial technologies to support innovative and impactful projects.

Education

Bachelor of Science (B.S.): Geomatics - King Abdulaziz University, Jeddah, Saudi Arabia

2025

GPA: (4.06 of 5)

Academic Projects

• Virtual Tourism for Souq Al-Alawi, Al-balad, Jeddah

(4- months Graduation Project)

Jan 2025 to May 2025

- Created an interactive 3D map of Souq Al-Alawi using photogrammetry with iPhone 15 pro max, Blender, and Unreal Engine.
- Integrated virtual tours and building information through Blueprint scripting, providing an immersive VR experience aligned with Saudi Vision 2030.

• 3D Holistic Shadow Model for KAU

(4-month GIS & 3D Analysis Project)

Sept 2024 to Dec 2024

- Developed an integrated 3D shadow model for King Abdulaziz University using Rhino 8, Grasshopper, and ArcGIS Pro.
- The project involved simulating dynamic shadows based on solar positioning and climate data, conducting spatial analysis with multidimensional rasters, and validating model accuracy through field measurements.

• Digital Documentation of Al-Arfa Castle

(4-month Heritage & 3D Modeling Project)

Sept 2024 to Dec 2024

- Led the digital preservation of Al-Arfa Castle using TLS (Leica RTC360), terrestrial photogrammetry (Nikon Z6, Agisoft), and LiDAR (iPhone 15 Pro Max).
- Processed data in Cloud Compare and Recap to create a unified high-resolution 3D model. The project aimed at conserving architectural heritage and enabling virtual access for future development.

• Real-Time Detection of Vehicles in Emergency Lanes

(4-month AI & Computer Vision Project)

Feb 2024 to May 2024

- Built a real-time vehicle detection system using Raspberry Pi 5, YOLOv8, and OpenCV.
- Trained a custom YOLOv8 model on labeled data to detect violations in emergency lanes.
- Defined ROI using image coordinates and implemented lane monitoring with live camera feeds.

• 3D Documentation of Historical Artifacts and Museum

(2-month Photogrammetry, LiDAR & Drone Project)

Nov 2023 to Dec 2023

- Digitally documented a historical museum interior using laser scanning (TLS) and exterior with drone photogrammetry.
- Small modeled artifacts (e.g., swords, rifles) using close-range photogrammetry and Agisoft Metashape.
- Processed and optimized 3D models using 3DF Zephyr and produced high-resolution outputs for preservation and virtual access.

• **Vegetation Cover Impact on Quality of Life in Jeddah Neighborhoods**

(2-month Remote Sensing & Spatial Analysis Project)

Sept 2023 to Oct 2023

- Conducted a remote sensing analysis using SPOT 5 & SPOT 7 imagery to assess vegetation dynamics from 2014 to 2021.
- Used NDVI and EVI indices, radiometric and geometric corrections, and supervised classification algorithms.
- Quantified green space per capita and evaluated compliance with WHO standards (9 m²/person)

• **Digitization and Modernization of Land Use**

(4 months Cartography Project)

Feb 2023 to Jun 2023

- Converting paper maps into digital format for WADI SHAQQ AL LABEN region
- Digitizing and updating land use characteristics based on recent satellite imagery from Esri and Google Earth
- Creating a comprehensive land use map and producing a map guide to support municipal planning for Al Jameeah Municipality

Work Experience

Geomatics (Internships)

June 2024 - August 2024

Saudi Consulting Services, Jeddah, Saudi Arabia

- Participated in multiple infrastructure and irrigation projects using GNSS (VRS, RTK) and Total Station.
- Updated and managed geospatial databases for Makkah region using ArcGIS Pro.
- Applied GIS techniques: digitizing plots, spatial analysis (e.g., Union, Erase, Intersect), and symbology.
- Developed a structured municipal database including districts, roads, and services for Jeddah city.
- Conducted fieldwork for asphalt layer inspections using leveling equipment and GPS measurements.

Geomatics (Internships)

July 2023 - August 2023

Saudi Geological Survey, Jeddah, Saudi Arabia

- Drone Usage: Learned to plan drone flight paths and gained hands-on experience in operating drones and collecting aerial data and processed in Pix4D and Wingtra Software.
- Surveying Equipment Training: Trained in the use of various surveying instruments.
- Laser Scanner Usage: Learned to operate laser scanner for high-precision site documentation and processed in Leica Cyclone software.
- Project Implementation: Executed a practical project to document the mosque within the authority using drone and laser scanner and Total Station instrument.

Language

Arabic

Native (C2)

English

Upper Intermediate (B2)

Soft Skills

- Teamwork & Collaboration
- Self & Fast Learning
- The Ability to work on multiple projects simultaneously
- Critical Thinking
- Solving Problems
- Attention to Detail
- Adaptability

Hard Skills

- Geographic Information System (GIS)
- Remote Sensing
- Photogrammetry
- Surveying
- Basic AI and Computer Vision
- Illustrator and Photoshop
- ArcGIS Suite
- ENVI Software
- CADD Software
- Unreal Engine
- Agisoft Metashape / Pix4D
- Microsoft Office Suite
- Geospatial Analysis
- Data Analysis
- Data Management
- 3D Modeling
- Python language
- SQL language

Certifications & Participations

- GACA Certified Drone Pilot – Part 107 Equivalent 2025
Authorized for commercial drone operations by the General Authority of Civil Aviation (Saudi Arabia)
- Certificate of Excellence for three successive semesters 2023 - 2025
The Deanship of Student Affairs, King Abdulaziz University, Jeddah
- Certification of Appreciation – Best Geomatics Project 2025
Faculty of Architecture and Planning, King Abdulaziz University – Awarded for the excellence of the project and its selection as the best project in the Geomatics Department.
- Outstanding Contribution – ISPRS 2025 Global Conference – Faculty of Architecture and Planning, KAU (for project selection and academic excellence) 2025
- Participation Certificate – Robocon Innovation Exhibition 2025
Innovation Title: “طوارئ بلا عوائق (Barrier-Free Emergency)” Recognized for participation in the Invention Exhibition held at King Abdulaziz University
- Certificate of Completion – 'Geospatial Analysis with ArcGIS' 2025
University of California, Davis via Coursera
- Certificate of Completion – "Going Places with Spatial Analysis" 2025
Esri MOOC (6-week course)
- Certificate of Completion – 'Introduction to GIS Mapping' 2024
University of Toronto via Coursera
- Certificate of Completion – 'Introduction to Geographical Information System (GIS)' 2024
Issued by: Saudi Council of Engineers
- Tamkin Alhadaf Training Center – Dubai Knowledge Authority 2024
Geographic Information Systems in ArcGIS Pro (Theoretical and Practical) 20 training hours over 10 days
- Certificate of Attendance – 'Basics of Geographic Information System (GIS)' 2022
Certified by Technical and Vocational Training Corporation – 35 hours