

Ali Mohamed

Milan, Italy

☎ (+39) 3517478767 | ✉ alibadmohamed23@gmail.com | 🌐 /Ali-bader | 📄 ali-mohamed-66b512219

Summary

Experienced Geospatial Specialist with a Master's degree in Geoinformatics from Politecnico di Milano. As a GIS - Remote Sensing Technical Specialist, I possess a solid foundation in survey engineering and Geographic Information Systems (GIS), bringing a comprehensive understanding of remote sensing applications. My technical acumen is complemented by expertise in computer science and geosciences. Proficient in Python and Java programming languages, I've honed my skills in utilizing GIS software including ArcGIS and QGIS. I am adept at collaborating within teams, leveraging excellent communication skills to foster joint achievements of shared objectives.

Education

Master of Science, Geoinformatics Engineering, Politecnico di Milano

Sep. 2020 - July 2023

- EARTH OBSERVATION.
- COMPUTER GRAPHICS.
- SUBSURFACE IMAGING AND DETECTION (GPR, Acoustic wave Simulation).
- PHOTOGRAMMETRY AND DRONE SURVEYING (Camera calibration, 3D modeling, image rectification, UAV surveys, DTM, orthophotos, laser scanner, point cloud analysis, satellite image processing).
- DATABASES (Database Applications, Relational Model, Database trigger)
- TECHNOLOGIES FOR INFORMATION SYSTEMS (Structured Data Integration)
- DATA MANAGEMENT FOR THE WEB
- SOFTWARE ENGINEERING FOR GEOINFORMATICS
- POSITIONING AND LOCATION-BASED SERVICES
- BUSINESS INFORMATION SYSTEMS
- COMPUTING INFRASTRUCTURES
- GEOGRAPHIC INFORMATION SYSTEMS
- GEOSPATIAL DATA ANALYSIS

Bachelor of Science, Surveying Engineering, University of Khartoum

Sep. 2011 - Oct. 2017

- LAND SURVEYING (GPS, Digital level), PHOTOGRAMMETRY, Cartography, REMOTE SENSING, DATABASE, ENGINEERING GEODESY, SATELLITE GEODESY, GEOSPATIAL DATA ANALYSIS.

Work Experience

MIERAG Space Technologies Company

Oct 2017 - Dec 2020

GEOMATICS ENGINEER

Khartoum, Sudan

- Led and managed a comprehensive initiative to demarcate farm boundaries across South Kordofan, West Kordofan, Al Gezira, and South Darfur states in Sudan while leveraging advanced satellite imagery within ArcGIS to monitor and analyze dynamic agricultural cycles, resulting in accurate farm area identification.
- Executed extensive urban and vegetation analysis using geospatial data, culminating in the creation of a robust and structured database that aided data-driven decision-making for sustainable land use and optimal resource allocation.
- Using captured aerial imagery via drones and establishing geospatial control points with Trimble GPS and Leica digital level in the Khartoum villages.
- Utilized georeferenced aerial images within ArcGIS to produce accurate maps for surrounding villages, aiding in precise spatial representation.
- Led the creation of a detailed Digital Terrain Model (DTM), providing essential insights for informed urban planning and strategic infrastructure development decisions. Successfully implemented cutting-edge technology to ensure high-precision geospatial data collection and analysis.
- Collaborated with cross-functional teams to ensure seamless integration of geospatial information into planning processes.
- Produced detailed reports and visualizations of GIS data, providing key insights for decision-making and supporting project planning and development.
- Tools: ArcGIS, advanced satellite imagery, Trimble GPS, Leica digital level.

Projects

Design and Development of an Application for Remote Sensing the Water Quality of the Insubric Lake

July 2023

POLITECNICO DI MILANO

- developed an application for monitoring water quality in lakes using remote sensing technology, contributing to the achievement of the UN's Sustainable Development Goal of ensuring clean water availability. The application utilizes satellite imagery from Sentinel-3 OLCI and Landsat-8 TIRS to produce Water Quality Parameter (WQP) maps, including Chl-a, TSM, and water surface temperature. The automated and user-friendly application enables timely detection of pollution sources, assessment of pollution control measures, and effective water resource management.
- tools: Docker, Python, Excel, NumPy, Pandas, Tkinter, QGIS, SNAP, Jupyter Notebook, Gdal GDAL.
- Supervised by: prof Maria Antonia Brovelli (maria.brovelli@polimi.it)

Developed a web-based map application illustrating the World Population Maps

Jan 2021

POLITECNICO DI MILANO

- I created a web-based map application that displays World Population Maps. Users can explore population data, visualize population distribution and density, and gain insights into global population patterns and trends.
- tools: QGIS, OpenLayers, JavaScript, GeoServer, HTML, CSS.
- Supervised by: prof Maria Antonia Brovelli (maria.brovelli@polimi.it)

Remote Sensing-Based Crop Classification and Health Assessment in Gezira, Sudan: A Study Utilizing Sentinel-2 Satellite Imagery

June 2022

POLITECNICO DI MILANO

- Conducted a study on crop classification using Sentinel-2 satellite imagery in the Gezira region of Sudan. Developed a model for identifying different crops, including cotton and sorghum, and assessing their health using remote sensing data.
- Skills Utilized: Remote sensing, satellite imagery analysis, crop classification, data visualization, QGIS, GDAL
- Supervised by: prof Giovanna Venuti (giovanna.venuti@polimi.it)

Visualizing and Analyzing the Valuable Services of North Rupununi Wetlands

July 2021

POLITECNICO DI MILANO

- Developed a web application to allow users to visualize the characteristics of North Rupununi wetlands and its valuable "services" for society and the environment and providing useful visualization and analysis tools
- tools: Python, Flask, HTML, PostgreSQL, Leaflet, GeoPandas, Json, Bokeh).
- Supervised by: prof Elisabetta Di Nitto (elisabetta.dinitto@polimi.it)

Kalman Filter Trajectory Plotter: A Graphical Tool for Parameter Input and Visualization

Feb 2021

POLITECNICO DI MILANO

- Developed tool with a Graphical interface allows the user to input the Kalman filter parameters and get trajectory plot as an output.
- tools: Python, Excel, NumPy, Pandas, Tkinter, Bokeh, Matplotlib.
- Supervised by: Professor Ludovico Biagi (ludovico.biagi@polimi.it)

Skills

Software: ArcGIS, QGIS, GeoServer, Esri products, SNAP, ERDAS Imagine, Agisoft Metashape, CloudCompare, Google Earth Engine, PostgreSQL, Docker, Microsoft package, Vulkan, 1C Software
Programming languages: Python, SQL, HTML, CSS, JavaScript, C++.

Soft Skills: Strong analytical skills, Ability to work under pressure and meet deadlines, Excellent communication and teamwork abilities.

Lingual Skills

- Arabic** Mother Tongue
- English** Fluent
- Italian** Intermediate level