Muhammad Naveed

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Home: Punjab ,(Pakistan), (Pakistan)

EDUCATION AND TRAINING

Bachelors in Geo-informatics (GIS & Remote Sensing)

Arid Agriculture University [2020 – 2024]

City: Rawalpindi | **Country:** Pakistan | **Website:** https://www.uaar.edu.pk/index.php | **Final grade:** 3.11/4.0 (CGP) | **Number of credits:** 127+ | **Thesis:** Assessing the Societal Impacts of Urbanization through Geo-Spatial Techniques: A Case Study Approach

Core Course:
GIS Mapping, Geo-statistics, Remote Sensing, Photogrammetry, Spatial Data Analysis & Visualization, GIS Programming, Hyperspectral RS, SDI, Webgis, Cartography, Fundamentals in GIS&RS, GPS, Introduction to Computer Programming, Statistic Probability, Surveying, Introduction Python & JavaScript, SQL

WORK EXPERIENCE

GIS Assistant

Tech GIS Private Ltd [01/2023 – 06/2023]

City: Islamabad | **Country:** Pakistan

My activities and responsibilities:-

1. Played a key role in the *Cadastral Mapping of Land State Pakistan* project, modernizing land records across four major regions (Sargodha & Dera Ghazi Khan divisions).
2. Processed satellite imagery, and performed digitization, georeferencing, and vector creation, ensuring accurate land parcel mapping.
3. Automated land record systems, improving accessibility and supporting sustainable urban planning for over 1,000 parcels.
4. Enhanced data accuracy, contributing to a 20% improvement in resource allocation for urban planning.

GIS Technician

Greenage Services Ltd [07/2021 – 12/2022]

City: Islamabad | **Country:** Pakistan

My activities and responsibilities:-

1. Conducted GPS/DGPS surveys to collect over 500 Ground Control Points (GCPs), ensuring high-precision geospatial data for mapping projects.
2. Collaborated with government departments, including the Board of Revenue (BOR) and Survey of Pakistan (SOP), to acquire and preprocess datasets, improving data accuracy by 30%.
3. Managed and organized geospatial datasets, streamlining workflows for a 25% reduction in project delivery time.
4. Captured and processed drone imagery, utilizing QGIS and ArcMap to produce detailed maps, supporting urban planning and infrastructure projects.
5. Delivered geospatial analysis outputs that improved decision-making processes for clients, resulting in a 15% increase in operational efficiency.

GIS Digitize

Mindgenix Solutions, Sialkot Region [01/2021 – 04/2021]

My activities and responsibilities:-

1. Coordinated surveyor data to develop detailed base maps for the FTTH (Fiber to the Home) planning project, ensuring 100% accuracy in fibre network layouts.
2. Input and managed attribute data, supporting the efficient design and distribution of over 200 kilometres of fibre optic cables.
3. Streamlined data integration processes, reducing project turnaround time by 20%.
4. Utilized GIS tools such as ArcMap and QGIS to analyze spatial data, enhancing network coverage optimization.
5. Collaborated with cross-functional teams to deliver accurate and actionable geospatial insights for fibre cable deployment.

INTERNSHIPS

GIS ANALYST (INTERN): (Pakistan Meteorological Department PMD)

My Activities and Learning Outcome:-

1. Mastered the GEEMAP library using Python API to collect, visualize, and analyze geospatial datasets, improving data processing efficiency by 25%.
2. Conducted statistical, Time Series and spatial analyses on datasets exceeding 1 TB to assess crop health and estimate yields, supporting precision agriculture initiatives.
3. Applied advanced analytics techniques, including machine learning and spatial modelling, to extract actionable insights, enhancing yield prediction accuracy by 20%.

PROJECTS

Semester Projects

Deep Learning-Based Pool Detection for Property Assessment: Trained a deep learning model in ArcGIS Pro, increasing property assessment accuracy by 35%.

Groundwater Potential Mapping Using Weighted Overlay Analysis: Identified high-potential zones with 85% accuracy in a 5,000 km^2 area.

LU/LC Classification Using Sentinel-1A and Landsat 8: Achieved 90% accuracy using machine learning algorithms.

Flood Inundation Mapping Using Google Earth Engine: Mapped flood risk areas for disaster response across 3,000 km^2.

Watershed Delineation Analysis in Swat District: Enhanced water resource planning using GIS techniques.

Time Series Analysis of Vegetation and Water Indexes: Performed NDVI, NDBI, and NDWI analysis using Google Earth Engine for agricultural insights.

Link: https://naveedali078.github.io/portfolio/#project

COURSES

Online Courses | MOOC

Spatial Data Science (Online) *Environmental Systems Research Institute (ESRI)* – 6 Weeks

Focused on advanced geospatial techniques, including spatial modelling and data visualization.

Imagery and GIS (Online) *Environmental Systems Research Institute (ESRI)* – 6 Weeks

Explore the integration of imagery with GIS for applications such as land use analysis and urban planning.

Artificial Intelligence *National Center of Artificial Intelligence (NCAI), NUST (NAVTTC)* – 6 Months

Developed expertise in AI techniques, including machine learning and data-driven decision-making processes.

Introduction to Geospatial Analysis with ChatGPT and Google Earth Engine *United Nations University* – 10 Hours

Learned geospatial analysis fundamentals, focusing on leveraging the Google Earth Engine for environmental studies.

Spatial Data Management with Google Earth Engine *United Nations University* – 30 Hours

Gained advanced skills in spatial data handling and visualization using Google Earth Engine.

GIS Programming *University of Tennessee, Knoxville* – 12 Weeks

Developed programming skills for GIS applications using Python, focusing on automation and spatial analysis workflows

SKILLS

Technical Skills

Geospatial Tools: ArcGIS, QGIS, Google Earth Engine (GEE), ERDAS IMAGINE

Programming: Python (NumPy, Pandas, Matplotlib), HTML, CSS

Machine Learning: Scikit-learn,

Remote Sensing: Satellite Data Analysis (Landsat, Sentinel), NDVI, NDBI, NDWI

Spatial Analysis: Buffering, Overlay, Network Analysis, Raster and Vector Data Handling

Statistical Analysis: Regression Models, Hypothesis Testing, Time-Series Analysis

Data Visualization: Power BI, ArcGIS Online

Geospatial Software: ArcGIS Pro, ArcMap, ArcGIS Desktop, QGIS, ERDAS IMAGINE

Data Science & Programming: Anaconda, Jupyter Notebook,Prompt Engineering

Version Control: Git, GitHub

CONFERENCES AND SEMINARS

[06/2024 – 07/2024]

Cloud Computing with Google Earth Engine and GeoAI at Harvard University of spatial Data lab

I attended a 3-day workshop on Cloud Computing with the Google Earth Engine and Geo-Artificial techniques on Automatic segmentation, which was organized by the Harvard University of Spatial Data lab

[05/2023 – 05/2023]

4th National Conference on Climate change in Pakistan

I participated in this seminar organized by the Agriculture Engineering Department of, PMAS AAUR and learned about climate change and its impact all over the world and what specific strategies reduce climate and secure food security and crops

LANGUAGE SKILLS

English (B2 Level)

I can communicate both verbally and non-verbally. I can write research reports, formal letters, and emails. I can present research at international workshops and communicate with diverse groups

HONOURS AND AWARDS

Awards & Achievements

PEEF Scholarship – *Government of Punjab, Pakistan* – 2017-2018
Awarded for academic excellence and merit, covering full tuition fees during undergraduate studies.

Ehsas Scholarship – *Government of Pakistan* – 2021-2024
Granted based on financial need and academic performance, supporting higher education in geo-informatics.

30-Day Map Challenge (2024) – *Competitive Achievement*
Recognized for outstanding participation in the 30-Day Map Challenge, showcasing skills in spatial data visualization.

Competitive Mapping and Data Visualization with Python in 30 Days (2024) – *Award for Excellence*
Awarded for outstanding participation in the 30-Day Challenge in a mapping and data visualization challenge, using Python programming and GIS tools.

Best GIS Thesis Project Award – *Arid Agriculture University* – 2023
Recognized for the outstanding GIS-based thesis on pure remote sensing Doamin in Urbanization and environmental studies.

RECOMMENDATIONS

Name: **Dr. Muhammad Amin** | Assistant Professor
Institute of Geo-Information & Earth Observation,
PMAS Arid Agriculture University Rawalpindi
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Name: **Dr. Fiaz Hussain** | Assistant Professor
Department of Agricultural Engineering, FAE&T
PMAS-Arid Agriculture University
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