SHARJEEL RASIB

Lichtenberg, Berlin
+(49) 1634066077 | sharjeelrasib66@gmail.com
linkedin.com/in/sharjeel-rasib/| github.com/Sharjeelrasib07

Geoinformatics Engineer with experience in Full-Stack WebGIS, Remote Sensing, and AI-Driven Spatial Analysis

Driving sustainable solutions by converting raw spatial data into decision-ready insights using Machine Learning and GIS techniques

Geospatial developer experienced in using open-source and full-stack tools to solve challenges in disaster management, real estate, and urban planning. Skilled in applied research, specifically using Machine Learning to predict hazards and UAV technology for mapping. I have a strong ability to organize and explain complex findings effectively. Expert in combining different data sources, building interactive web maps, and handling real-time data to help users make better decisions. Dedicated to building practical, data-driven solutions for sustainability and climate action.

- Awarded **2nd Industrial Prize** for the Landslide Susceptibility Analysis project, proposing strategies to mitigate disaster risks and enhance early warning systems using Machine Learning and GIS techniques.
- Developed a high-performance interactive mapping interface using Mapbox GL JS, implementing the Google Maps Geocoding API for precise address resolution and optimizing vector tile rendering for fluid user exploration.

CORE COMPETENCIES

Spatial Data Analyses | Machine Learning | GIS Development | Spatial Database Management | Remote Sensing
API & Web Development | IoT Programming | Report Writing | Multispectral Image Processing
ArcGIS | QGIS | ArcMap | AutoCAD | ERDAS Imagine | Grass GIS | Google Earth Engine | Pix4D | Weka
Python | GDAL | Scikit-learn | C++ | Django | Flask | SQL | PostGIS | MongoDB | GeoServer | R Language

PROFESSIONAL EXPERIENCE AND ACHIEVEMENTS

JUGRAFIYAA, Islamabad (Pakistan)

GIS WebDeveloper **06.2024 – 10.2024**

Developed a modular, high-performance geospatial interface utilizing React and Tailwind CSS, integrating RESTful APIs to visualize real-time backend datasets and streamline spatial analysis workflows.

Key Achievements:

- **Built a responsive web map** interface using React, TypeScript, and Tailwind CSS, integrating Mapbox GL JS to create interactive maps that allow for smooth user exploration.
- **Developed dynamic features** by connecting backend APIs to the React frontend, allowing real-time spatial data to be displayed directly on **Mapbox** layers to provide clear and useful insights.

Landslide Prediction, Final Year Design Project – Bachelor's Thesis

Team Lead **09.2023 – 05.2024**

Led a geospatial research project addressing landslide susceptibility through GIS, Machine Learning, and real-time weather data, resulting in an automated early warning system for disaster risk reduction. Analyzed the impact of environmental and terrain factors on landslide risks to support proactive community safety and infrastructure planning.

Key Achievements:

- Built a multi-source spatial data pipeline by integrating satellite imagery (Landsat 8, Sentinel-2), SRTM DEM, and geological datasets to derive critical factors like slope and NDVI.
- Applied a Random Forest algorithm to predict landslide susceptibility maps (LSM), optimizing the model using Principal Component Analysis (PCA) to remove correlated variables and improve efficiency.
- Built an automated React-based web portal for real-time risk monitoring, integrating the OpenWeather API to forecast dynamic rainfall triggers and delivering 3D visualizations for actionable alerts.

JUGRAFIYAA, Islamabad (Pakistan)

Web Dev Intern **08.2023 – 10.2023**

Applied open-source web development concepts to build geospatial applications, developing practical proficiency in full-stack workflows and interactive map visualization.

Key Achievements:

- **Developed a full-stack interactive** tourist map of Berlin using Mapbox GL JS, implementing the Google Maps Geocoding API to enable precise address search and seamless urban exploration.
- Built a dynamic time-series data visualization tool using **React** and **Plotly.js**, enabling the efficient analysis of temporal trends through responsive and interactive charts.

National Disaster management Authority, Islamabad (Pakistan)

GIS Analyst – Intern **06.2022 – 06.2023**

Conducted geospatial analysis for disaster risk assessment and environmental monitoring, using GIS software and automated scripts to process satellite data and support decision-making.

Key Achievements:

- Conducted a Multi-Hazard Vulnerability Risk Assessment **(MHVRA)** for Muzaffarabad and performed **Site Suitability Analysis** for Astore to identify safe and optimal zones for development.
- **Streamlined the digitization process** by integrating **Python** automation to capture live server responses directly into a PostgreSQL database.
- **Automated** the land classification process by building a Google Earth Engine workflow that extracts areas of interest, classifies Land Use Land Cover (LULC), and saves the output directly to the drive.
- Integrated **Python** scripts to calculate vegetation indices (NDVI & SAVI), significantly reducing manual processing time for environmental health monitoring.

EXTRACURRICULARS

- Awarded a performance certificate for exemplary contribution in completing 30 hours of community service at NUST-Islamabad **2024**
- Achieved athletic distinction by winning **three Inter-NUST Badminton Tournaments** and the **District Championship**, while securing a runner-up position in one event and representing the region at the **Provincial level**. **10.2020 – 04.2024**
- Demonstrated teamwork and strategic leadership by winning the Inter-NUST Cricket Tournament and securing 1st prize in the District Speech Competition, showcasing strong communication skills. **10.2020 – 04.2024**
- Actively participated in two **NUST AI Coding Competitions**, applying technical problem-solving and algorithmic logic in a competitive environment. **2024**

Interests: Table Tennis, travelling (Lived in over 5 Cities), Art, Food,Badminton,Cricket,Chess

EDUCATION AND QUALIFICATION

Technische Universität Berlin - Germany

Master of Science - Geodesy and Geoinformation Science **10.2024 – 06.2026**

Relevant Courses – Geodatabases, Photogrammetric Computer Vision, Geoinformation

National University of Sciences and Technology - Islamabad (Pakistan)

Bachelor of Geoinformatics Engineering: CGPA 3.73 / 4 **09.2020 – 06.2024**

Relevant Courses - Web GIS, Machine Learning, Data Warehouse & Data Mining, Spatial Data Analysis, Photogrammetry,Digital Mapping and image processing

INDEX

Click on the project to glide there

Sharjeel Rasib | sharjeelrasib66@gmail.com

GEO
SPATIAL

Project Catalog

sharjeelrasib66@gmail.com

Sharjeel Rasib

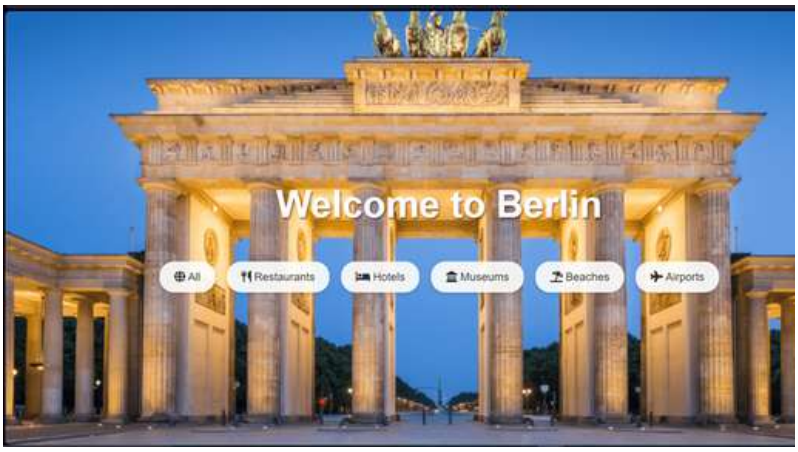
Exploring the Potential of Geoinformatics

To me, geoinformatics is not just about producing maps. It is fundamentally about interpreting the world around us through data. This catalog highlights how I use spatial analysis and remote sensing to tackle specific challenges like assessing urban temperature variations or developing interactive web-based GIS tools. My goal with every project is to take raw information and transform it into visual stories that drive sustainable decision-making. I want to show that when we combine rigorous analysis with clear design, we can turn complex geography into actionable insights that truly make a difference.

Berlin Map

Key deliverables

- Develop an interactive Mapbox GL JS interface to visualize distinct tourist categories, including museums, hotels, restaurants, and recreational spots.
- Render custom GeoJSON data layers to provide spatial context and categorize points of interest across the Berlin cityscape.
- Integrate Google Maps Geocoding API to enable precise address search functionality, allowing users to locate specific destinations instantly.
- Design interactive popups that display essential location details and imagery immediately upon selecting a specific point of interest.
- Optimize map rendering performance to ensure smooth zooming, panning, and rotation for a seamless user exploration experience across devices.



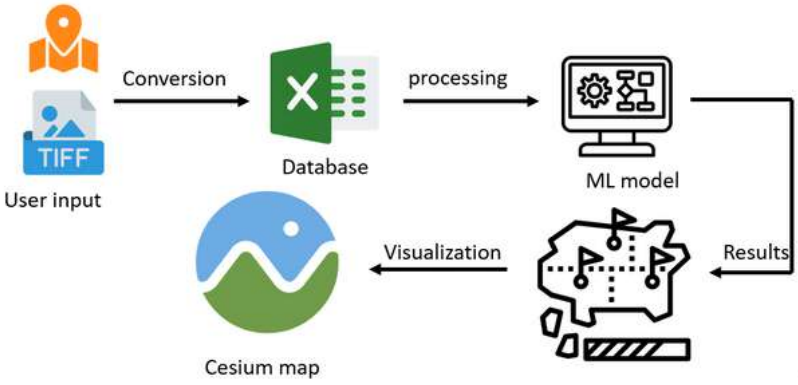
Sharjeel Rasib | sharjeelrasib66@gmail.com

Landslide Prediction

Key deliverables

This project aims to predict landslide susceptibility and exposure risks by integrating diverse environmental and terrain-related datasets using Machine Learning and GIS techniques. A Random Forest algorithm powers an automated, web-based early warning system that provides real-time alerts and 3D visualizations to communities and authorities, enabling proactive disaster mitigation.

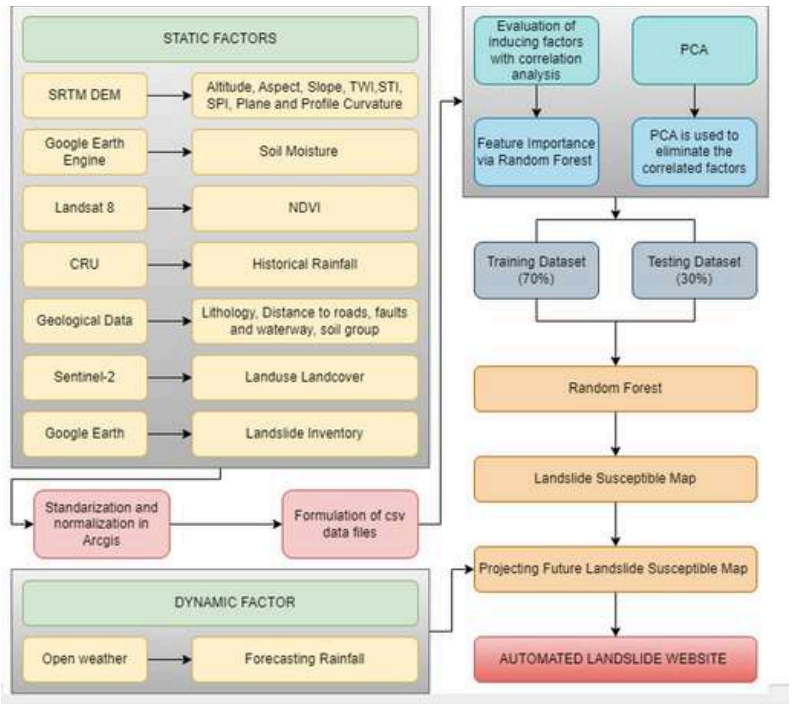
- These systems help us understand where landslides are most likely to occur, allowing for proactive measures like building restrictions or evacuation plans.
- Early detection of triggers like heavy rainfall allows authorities to warn communities before a landslide strikes, enabling evacuation and reducing casualties.
- Knowing landslide risks helps communities prepare emergency response plans, stockpile resources, and conduct public awareness campaigns.



Sharjeel Rasib | sharjeelrasib66@gmail.com

Constructed an interactive web dashboard featuring 3D geospatial visualizations and a crowdsourcing interface, allowing communities to visualize high-risk zones and contribute real-time ground observations for model validation.

- Engineered a multi-source spatial data pipeline by integrating satellite imagery (Landsat 8, Sentinel-2), SRTM DEM, and geological datasets to derive critical static factors like slope, aspect, and NDVI
- Performed rigorous data preprocessing and feature optimization using ArcGIS for standardization and Principal Component Analysis (PCA) to eliminate correlated variables and enhance model efficiency.
- Developed a predictive machine learning model using Random Forest, training it on historical landslide inventories to generate high-precision Landslide Susceptibility Maps (LSM).

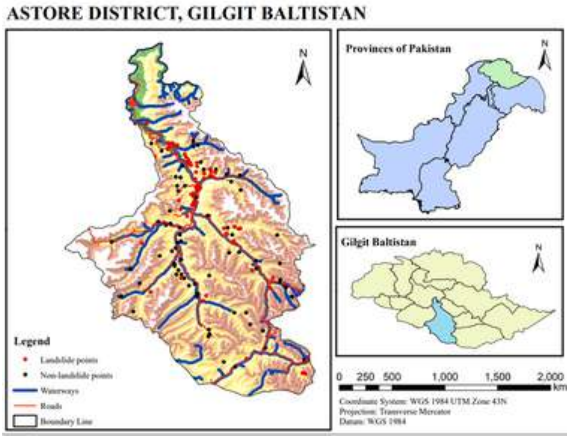


I contributed to this project as the team lead, during the final year of my undergraduate program.

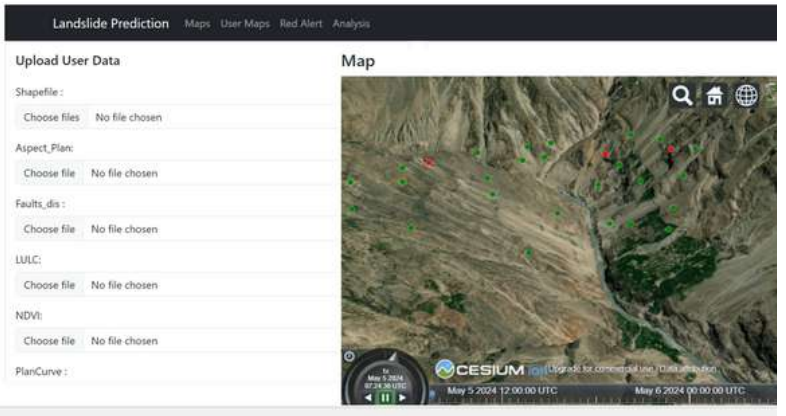
Landslide Prediction

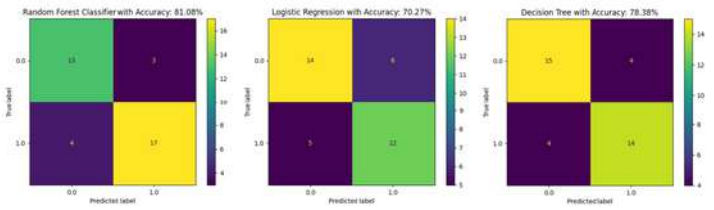
QGIS MySQL python Flask node.js React GeoServer Google Earth Engine ArcGIS jupyter

- Integrated real-time meteorological data via the OpenWeather API to account for dynamic rainfall triggers, enabling the system to project future susceptibility based on live weather forecasts.

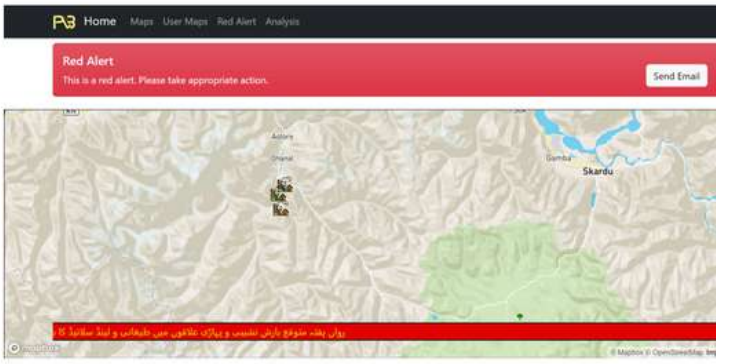


- Deployed an automated web-based warning system that visualizes risk zones and delivers actionable alerts, supporting disaster risk reduction for vulnerable communities.

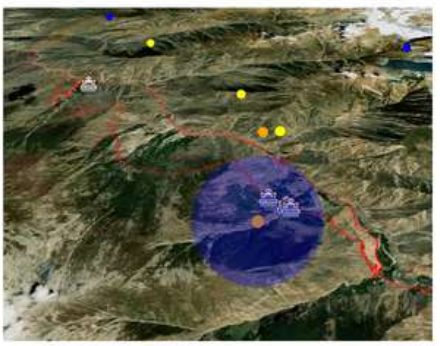




WARNING ALERT



RISK EXPOSURE ANALYSIS



Sharjeel Rasib | sharjeelrasib66@gmail.com

I contributed to this project as the team lead, during the final year of my undergraduate program.

Web Maps

Leaflet mapbox OSM OpenStreetMap TECH STACK

Key deliverables

Developing and deploying interactive web maps using **Leaflet.js** and **Mapbox**, enabling users to explore geospatial data from multiple dynamic sources.

- Created a graduated symbol map to visualize global sales performance, enhancing strategic decision-making through spatial insights.

- Developed a custom **WordPress** geolocation tool that returns administrative boundaries (cities, countries) on search, effectively replicating Google Maps API functionality and offering a cost-free alternative for boundary queries.

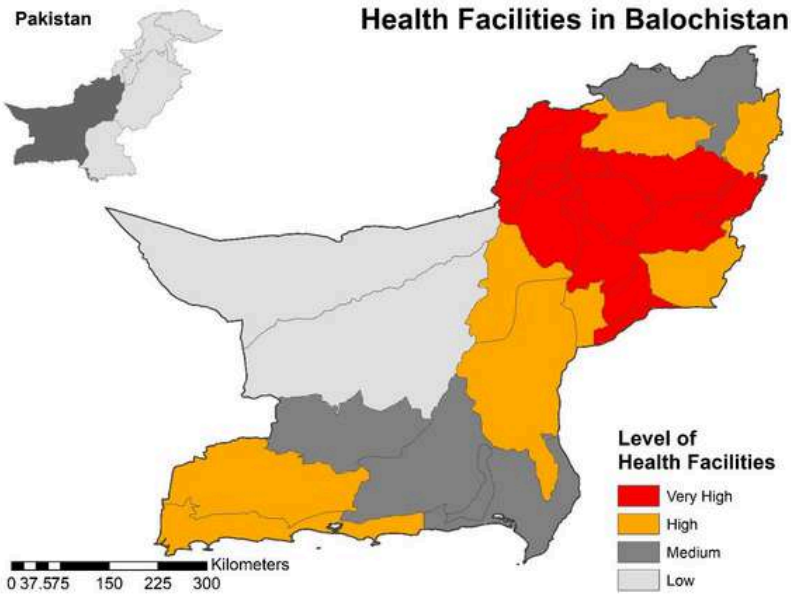
- Integrated Excel-based datasets directly into the map interface, allowing users to click markers for rich, location-specific details streamlining data interpretation without backend processing.

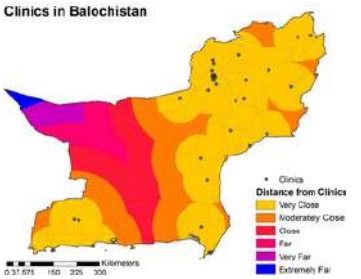
Sharjeel Rasib | sharjeelrasib66@gmail.com

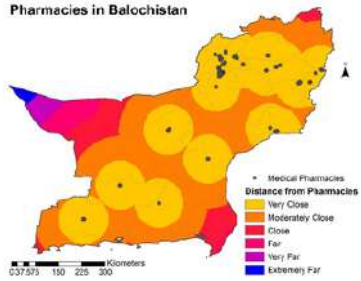
Static Maps

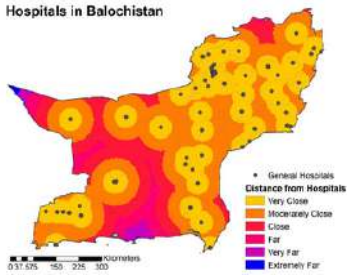
ArcGIS QGIS TECH STACK

- Proficient in creating static maps using **ArcMap** and **QGIS**, with full workflow capabilities: data cleaning, geoprocessing, spatial analysis, and cartographic design.

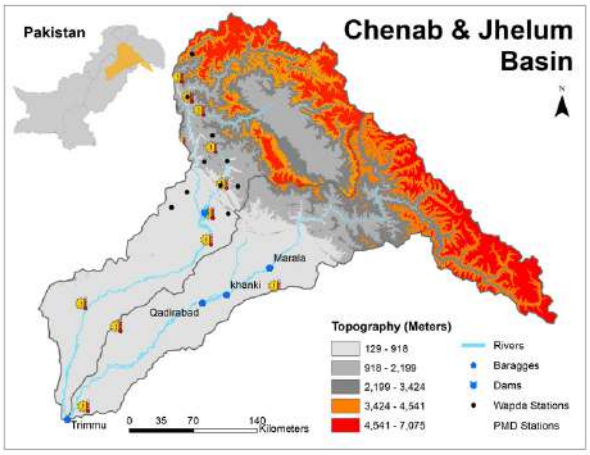


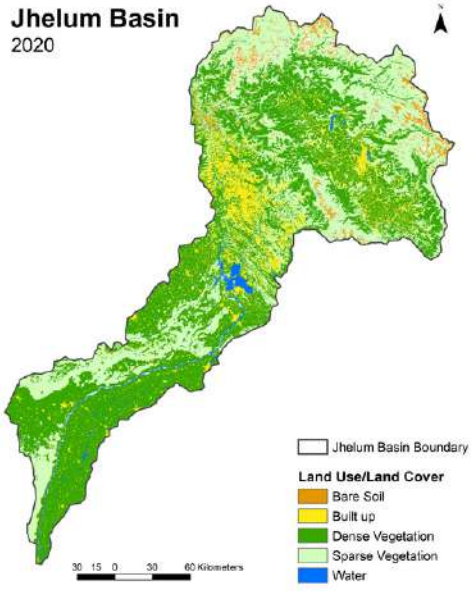




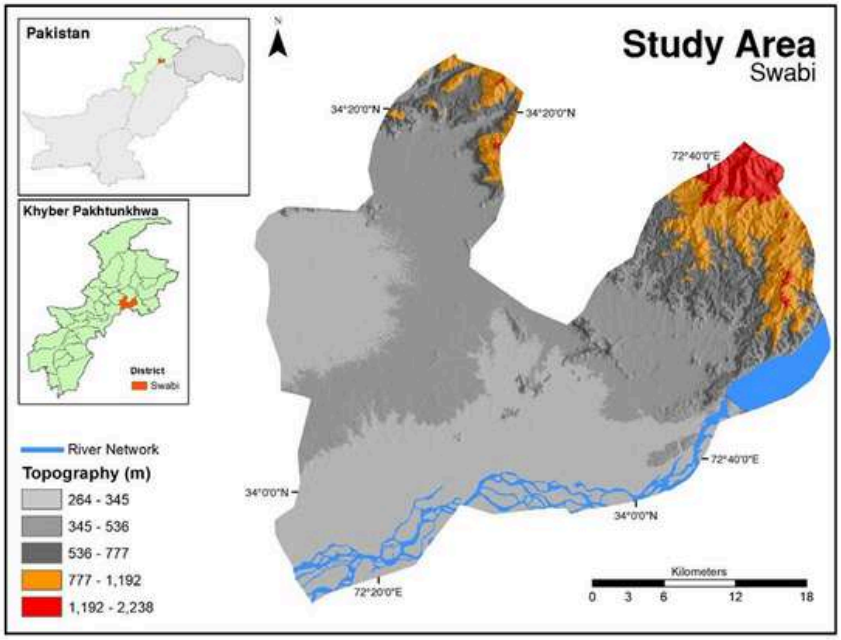


- Developed a spatial analysis project evaluating health facility access across districts by applying Euclidean distance analysis and spatial overlays (using maximum operation), classifying regions into high, medium, and low accessibility.





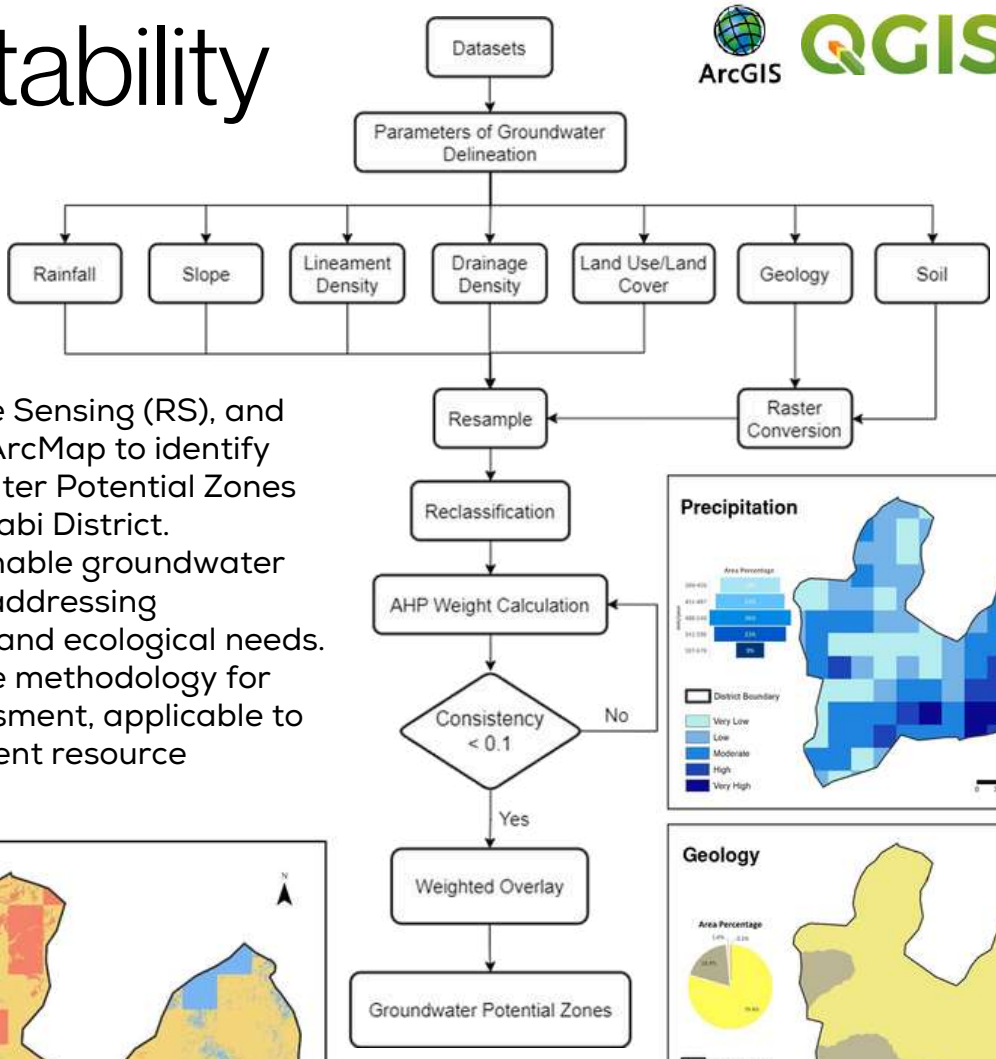
- Demonstrated advanced cartographic design skills, producing visually compelling, information-rich maps that balance clarity, precision, and aesthetics effectively communicating complex spatial patterns.



Sharjeel Rasib | sharjeelrasib66@gmail.com

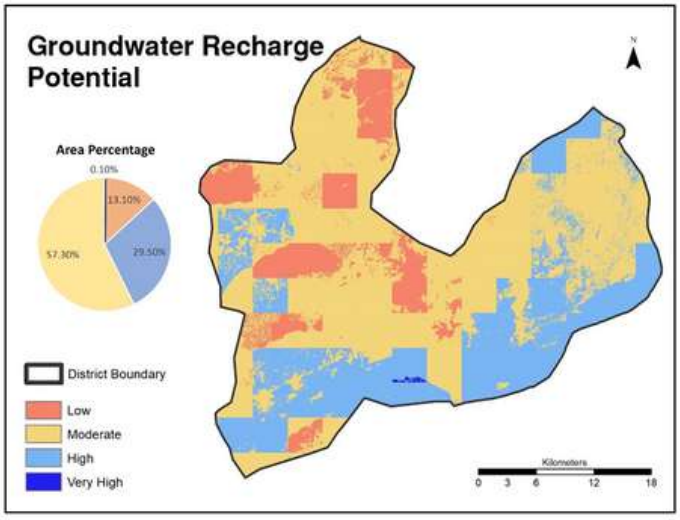
Site Suitability

ArcGIS QGIS TECH STACK

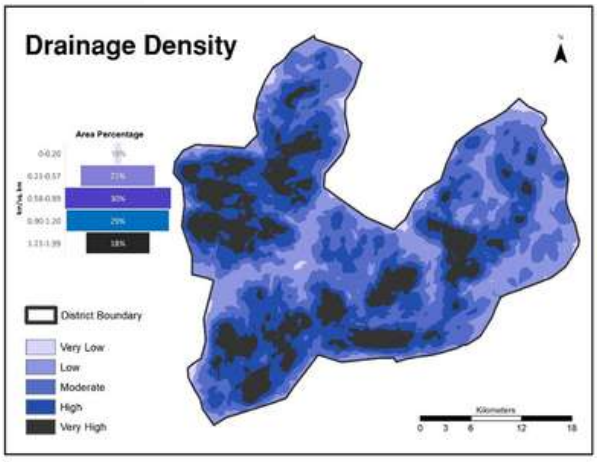


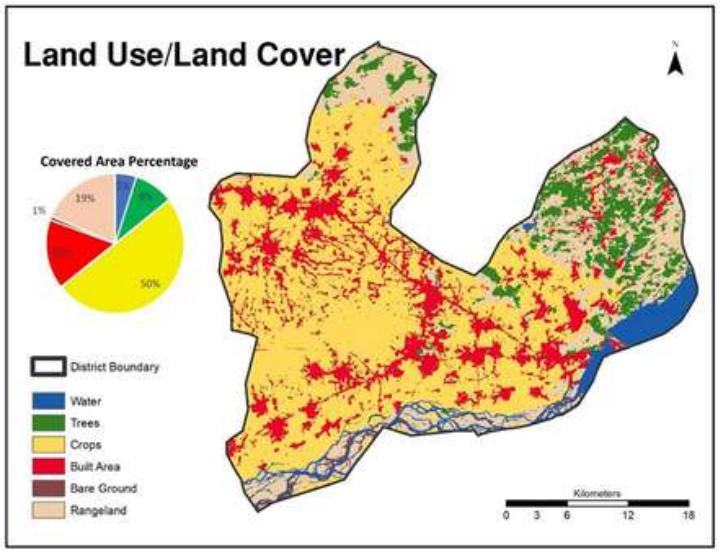
Key deliverables

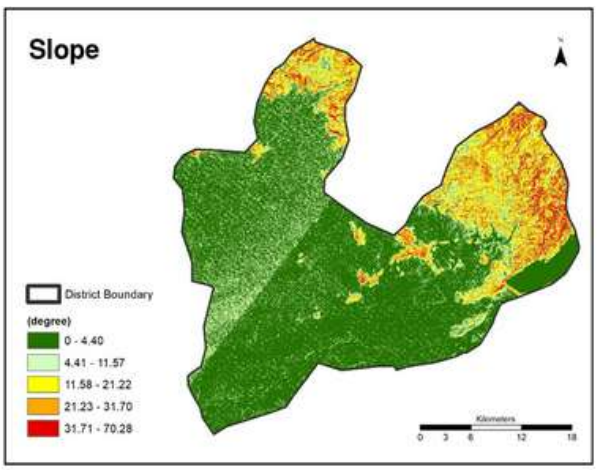
- Utilized GIS, Remote Sensing (RS), and AHP techniques in ArcMap to identify and map Groundwater Potential Zones (GWPZs) across Swabi District.
- Developed a sustainable groundwater management plan addressing agricultural, urban, and ecological needs.
- Proposed a scalable methodology for groundwater assessment, applicable to any region for efficient resource management.



- Created detailed thematic maps showcasing GWPZs, integrating various spatial datasets for clear, actionable insights.







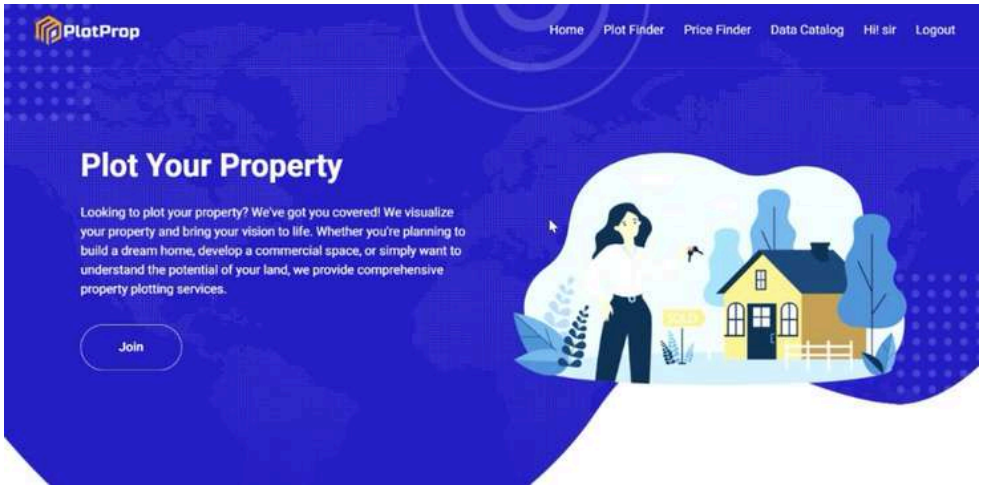
Sharjeel Rasib | sharjeelrasib66@gmail.com

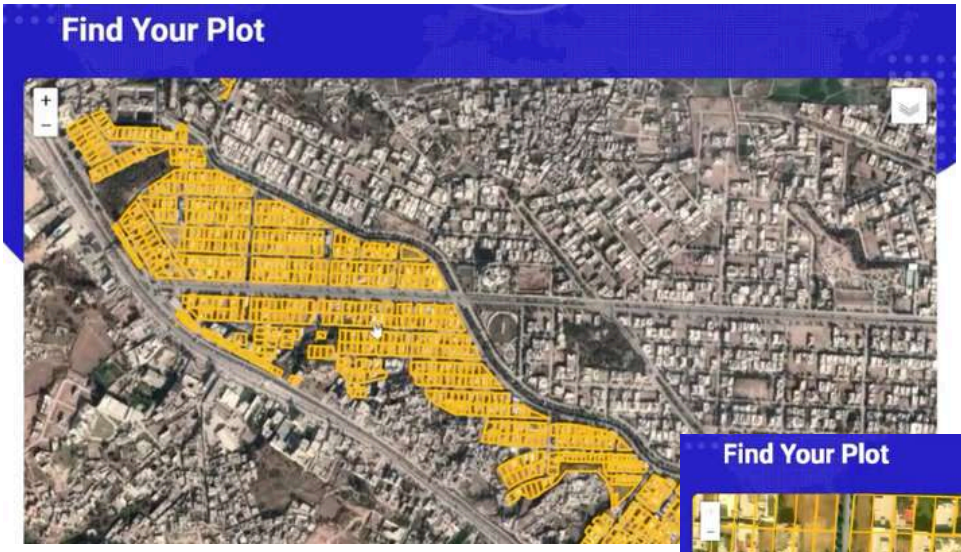
Plot Prop

PostgreSQL GeoServer django TECH STACK

Key deliverables

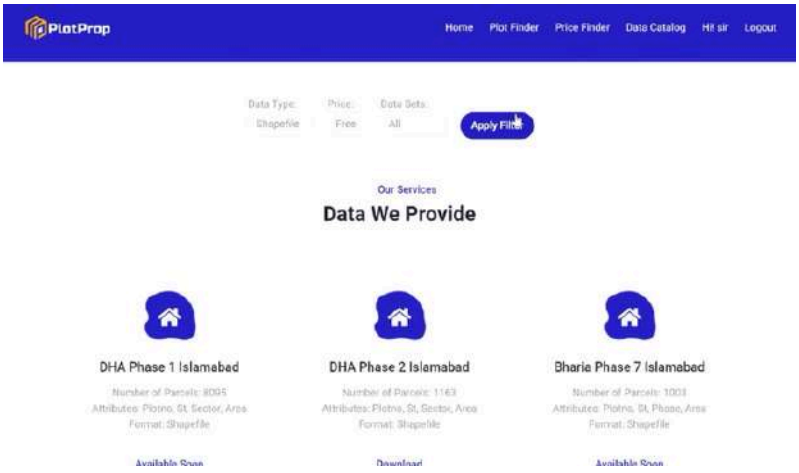
- Developed a full-stack GIS web application using PostgreSQL, Django, **Bootstrap**, and GeoServer to manage and visualize real estate plots.





- Integrated WMS and WFS services from **GeoServer**, applied custom **SLD** styling, and rendered interactive map layers via Leaflet—enabling users to click plots and view detailed property information.

- Implemented user authentication and role-based access using Django's built-in libraries, allowing admins to access extended analytics and management features.



- Enabled polygon-based spatial search for plots within a user-drawn area, returning results dynamically via AJAX.
- Explored and tested multiple data formats (e.g., XML) for flexible data ingestion and interoperability.

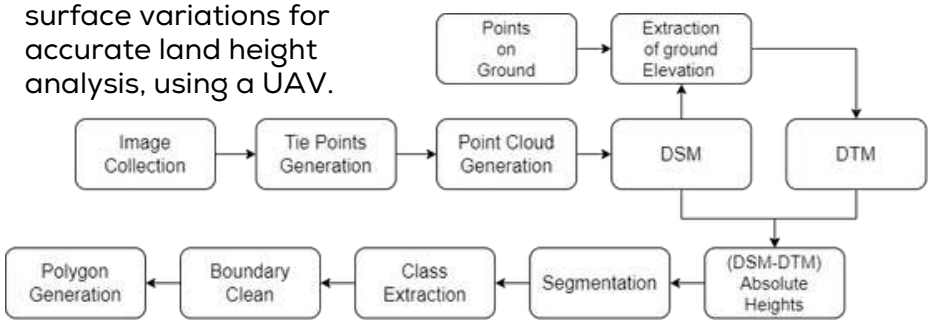
Sharjeel Rasib | sharjeelrasib66@gmail.com

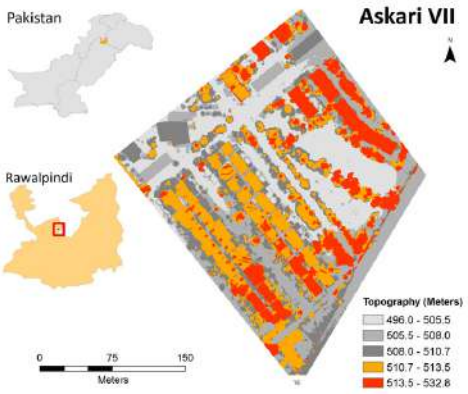
Digitization Automation

ArcGIS QGIS TECH STACK

Key deliverables

- Developed an automated system to extract land parcels from high-resolution UAV imagery using GIS spatial tools, significantly streamlining cadastral mapping for urban planning.
- Generated precise **Digital Surface Models** (DSMs) and Digital Terrain Models (DTMs) to capture terrain elevation and built-up surface variations for accurate land height analysis, using a UAV.

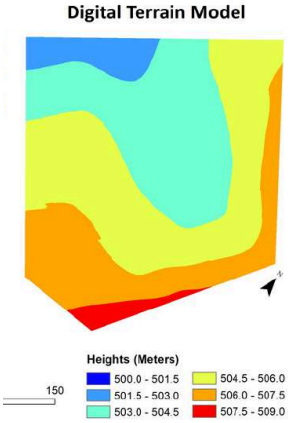


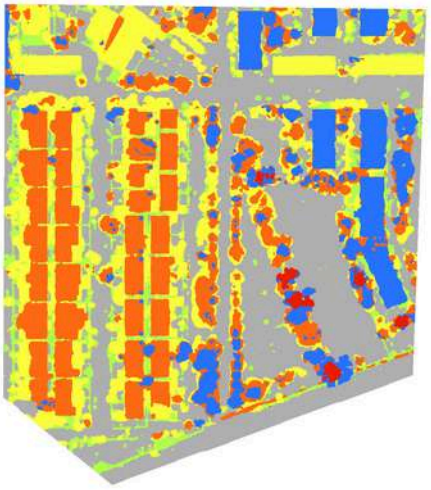


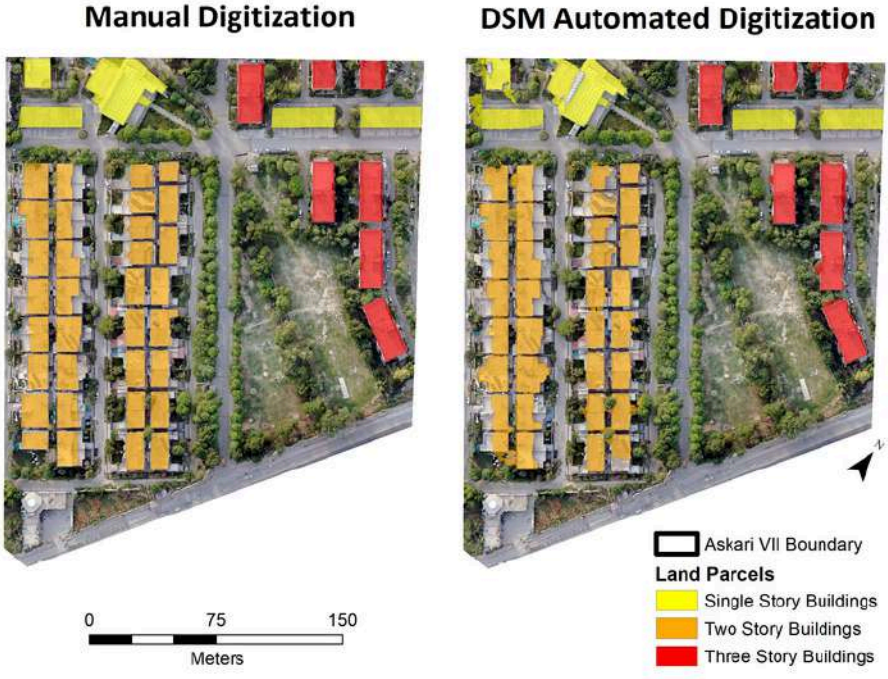
- Integrated UAV-captured imagery to produce high-resolution orthomosaic datasets for urban land analysis.
- Automated land parcel boundary extraction using ArcGIS and Pix4D, reducing reliance on manual digitization.
- Generated detailed DSM and DTM layers to accurately compute parcel elevations, supporting effective land valuation and management.

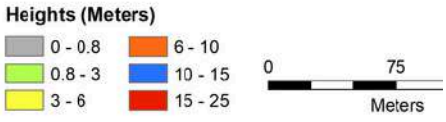
- Delivered a cost-effective and time-efficient workflow that reduced manual digitization efforts in land management processes.
- Contributed to data-driven, transparent urban planning by improving accuracy in land boundary delineation and supporting evidence-based decision-making for sustainable development initiatives in Pakistan.

https://doi.org/10.31428/10317/13599









Utilized GIS-based tools to overlay digitized boundaries onto topographic and cadastral maps, ensuring accurate representation of spatial features.

Snapshot of the 3D Model

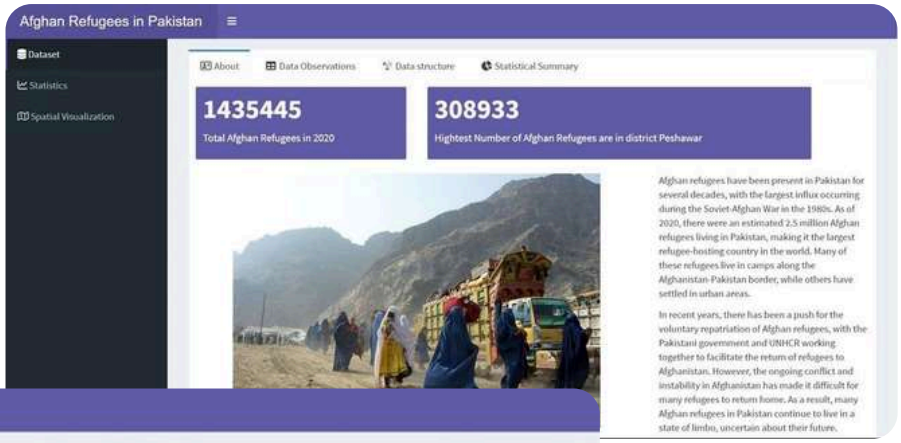
Sharjeel Rasib | sharjeelrasib66@gmail.com

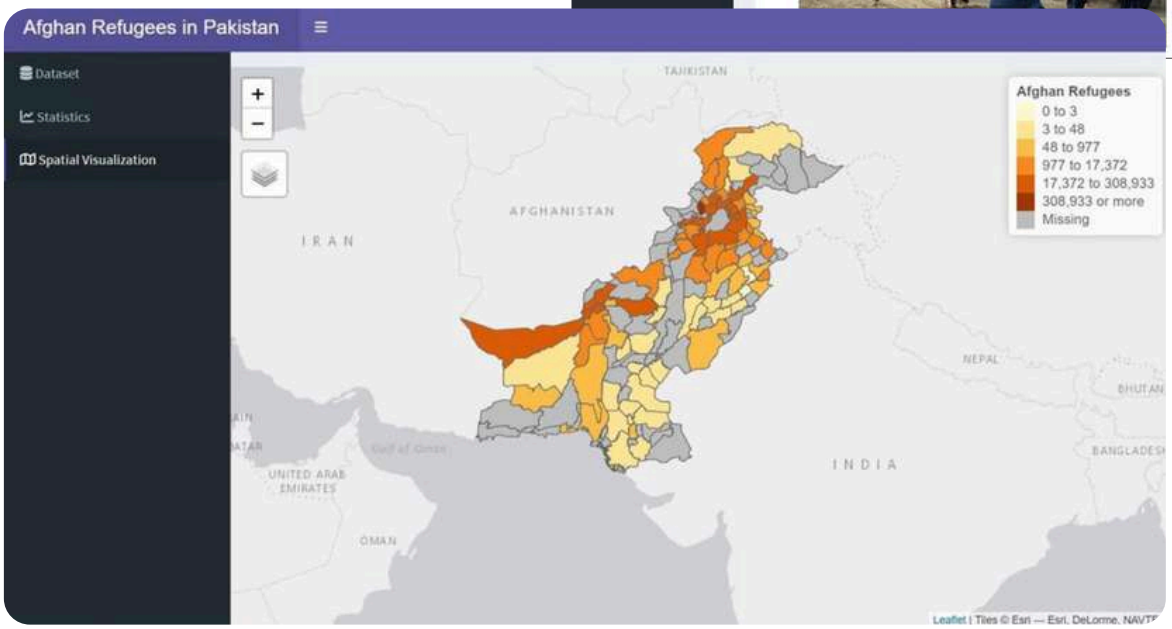
Statistical Dashboard

TECH STACK

Key deliverables

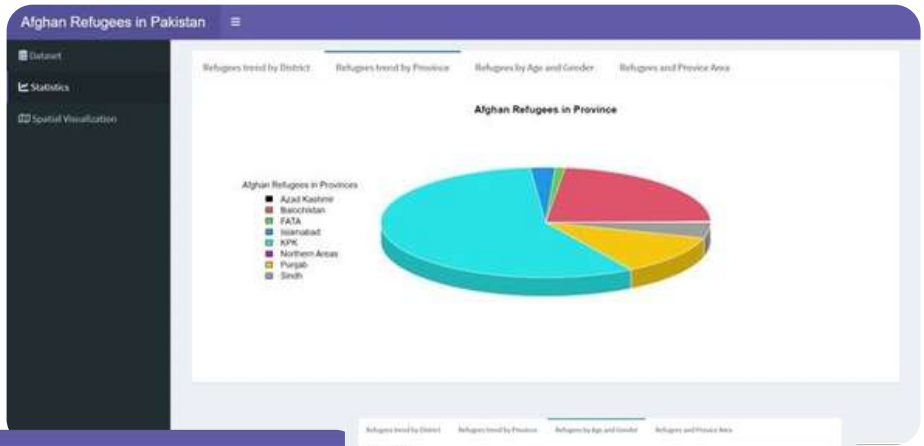
- Developed a statistical dashboard using the **R Shiny** framework to visualize refugee distribution across districts in Pakistan.
- Integrated CSV-based statistical data with district-level shapefiles using sf, leaflet, and rgdal libraries for spatial mapping.

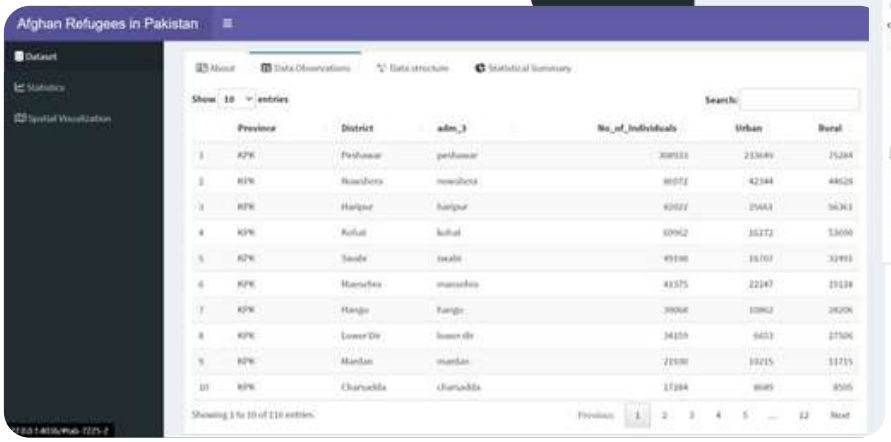




- Presented key indicators through interactive bar charts, pie charts, and data tables using **ggplot2** and plotly for dynamic user exploration.

- Enabled policy-level insights by linking spatial and numerical data into a cohesive, user-friendly interface—supporting data transparency and humanitarian planning.





Sharjeel Rasib | sharjeelrasib66@gmail.com

TECHNISCHE UNIVERSITÄT BERLIN
MASTER OF SCIENCE
GEODESY AND GEOINFORMATION SCIENCE

NATIONAL UNIVERSITY OF
SCIENCES AND TECHNOLOGY
BACHELOR OF GEOINFORMATICS ENGINEERING

Contact

Coppistraße, Berlin
+49 163 4066077
sharjeelrasib66@gmail.com
https://www.linkedin.com/in/sharjeel-rasib/
https://github.com/Sharjeelrasib07

THANK YOU