




Muhammad Bilal

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WORK EXPERIENCE

Riscognition

Munich, Germany

Geospatial Analyst Intern

May 2023 – August 2023

Project: Visualization of near-real-time lightning data on the web using the Maplibre JavaScript library and overlay with landcover and forest layers to access the effect of lightning on forest fires for the SAFERs Project.

- Transformation of lightning data into PMtiles format using the Tippecanoe command-line tool for efficient web visualization.
- Configured the Mini.io cloud platform for hosting lightning data, landcover, and forest datasets.
- Visualization of hosted data using Maplibre JavaScript Library.
- Implementation of hotspot functionality to visualize lightning strike intensity at different locations in Europe.

Propsure Digital Solutions

Islamabad, Pakistan

Deputy Manager GIS

January 2020 – October 2022

- Performed Managerial roles in various projects.
- Managed centralized database and dashboard related to real estate services.
- Developed geodatabases and conducted quality assessments.
- Created static indoor maps of commercial high-rise buildings.
- Designed Spatial Queries for GIS development.
- Visualized big data using PostGIS databases and Geoserver for mapping applications.
- Built a prototype dashboard for visualization Land Record System using leaflet.
- Conducted Demographic and Feasibility analysis of Real Estate properties.
- Created 3D Visualization of Properties using Cesium JS Library.

TPL Maps

Islamabad, Pakistan

GIS and Remote Sensing Internship

July 2018 – September 2018

- Conducted Spatial Analysis using QGIS and PostgreSQL / PostGIS Database.
- Develop Internet Mapping with Geoserver and PostgreSQL.
- Mapped jurisdiction and results of the Pakistan General Elections 2018.

EDUCATION

Copernicus Master in Digital Earth – Geoinformatics and Cartography

Awarded Erasmus Mundus Scholarship

Austria, Czech Republic

Paris Lodron University of Salzburg & Palacky University Olomouc

2022 - 2024

Master Thesis: Using geotagged photos to design Etosha National Park map set.

BS (Hons.) Geo-Informatics

Rawalpindi, Pakistan

Pir Mehr Ali Shah Arid Agriculture University

2015 - 2019

Bachelor Thesis: Automated Feature Extraction from Satellite Imagery using Deep Learning.

PROJECTS

Academic Projects

- Develop an interactive web map for Etosha National Park using leaflet and HTML/CSS.
- Develop an interactive web application for Tam Giang Lagoon water quality using ArcGIS Experience Builder.
- Performed UAV Images processing and modelling to create Orthomosaic image and Dem of a football field.
- Performed feature detection analysis using EO Browser-Custom Scripts from Sentinel 2 Imagery.
- Conducted temperature time series analysis using Google Earth Engine.
- Implement Knowledge base model for the Earth Observation Data Cube of Austria to analyse vegetation change.
- Identified suitable sites for tourist hotels in Austria using weighted overlay and cost path analysis.
- Performed Geomorphometrical analysis of catchment area around Taxenbach's southern part of Salzburg.
- Carried out visibility analysis for a hotel in Salzburg using line of sight and viewshed techniques in ArcScene.
- Planned routes for waste collection trucks using network analysis.
- Designed different type of thematic maps including choropleth, Graduated symbol, Multivariate and Wurman Dots maps.

SKILLS

Software / Platforms: ArcGIS Pro, QGIS, Google Earth Engine, PostgreSQL/PostGIS, Agisoft Metashape, Ecognition, ArcGIS Online, ESRI Suite, Mapbox Studio, Carto, MapTiler, GitHub, Geoserver, Adobe Illustrator, Inkscape, SketchUp, Microsoft Office.

Technical: SQL (Spatial Queries), Leaflet, Maplibre GL JS, Mapbox GL JS, Python, R, GeoMap, HTML/CSS.

Geospatial Relevant: Spatial Analysis, Network Analysis, Web Mapping, Data Modelling, Thematic Cartography, 3D Modelling, Object-Based Image Assessment, Data Processing and Management.

LANGUAGES

English: Fluent | German: Basic | Urdu: Native

SUMMER SCHOOLS & CONFERENCES

- GI-Salzburg23 Conference, International Forum for Geoinformatics (July 2023).
- Blended Intensive Course (BIP) - Participatory tools for urban nature planning and management (Feb 2023 – June 2023).
- International Spring School on Visualization 2023, Palacký University Olomouc, Czech (May 2023).
- Member of Workshop on Mobile GIS Data Collection & Management System (UAAR, 2015).
- Regional Training Workshop on GIS for Agricultural Monitoring (UAAR, 2016).

TRAINING CERTIFICATES

- Introduction to Surface Modeling Using ArcGIS (Esri, 2023).
- GIS Web Maps with HTML, JS, CSS, and off the shelf tools (Udemy, 2019).
- GIS Surveying and Analysis (PITB, 2018).
- Digital Image Processing with OpenCV in Python (Geo University, 2018).

REFERENCES

- **Radek Barvír** - Thesis Supervisor
Assistant Professor | Palacký University Olomouc | radek.barvir@upol.cz | Academic Reference
- **Jakob Lobensteiner** - Internship Manager
Chief Technological Officer | Riscognition | jakob.lobensteiner@riscognition.com | Professional Reference
- **Bilal Ahmad Jadoon** – Propsure Digital Solution Manager
Head of Engineering | Imarat Group | Bilal.ahmed@imarat.com.pk | Professional Reference