



MUHAMMAD BILAL

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WORK EXPERIENCE

Research Intern

Riscognition, Munich, Germany

May 2023 – August 2023

- Project: Visualization of near real-time lightning data using Maplibre JavaScript library and overlay with landcover, and forest layers to visualize the effect of NRT lightning data on the forest fires for SAFERs Project.
- Convert Lightning Data into PMtiles format Using the Tippecanoe command line tool.
- Configuration of Mini.io cloud platform for Hosting PMtile Data (Lightning Data).
- Visualizing PMtile data using Maplibre JavaScript Library.
- Using hotspot functionality to visualize lightning strike intensity at different locations in Forest.

Deputy Manager GIS

Prospure Digital Solutions, Islamabad, Pakistan

Jan 2020 – October 2022

- Performed Managerial roles in various projects during this tenure.
- Managed Centralized Databases and Property Dashboard.
- Geodatabase Development and Quality Assessment.
- Static Indoor Mapping of Commercial High-Rise Buildings
- Designing Spatial Queries for GIS Development.
- Big Data Visualization Using PostGIS Databases and Geoserver for Mapping Application.
- Built a Prototype Dashboard for Visualization Land Record System using JavaScript.
- Demographic and Feasibility Analysis of Real Estate Properties.
- 3D Visualization of Properties Using Cesium JS Library.

GIS and Remote Sensing Intern

TPL Maps, Islamabad, Pakistan

July 2018 – September 2018

- Spatial Analysis using QGIS/ PostgreSQL/ PostGIS Database.
- Internet Mapping with Geoserver and PostgreSQL.
- Pakistan General Elections 2018 Jurisdiction and Result Mapping.

EDUCATION

Copernicus Master in Digital Earth (Erasmus Joint Master Degree Program)

Paris Lodron University of Salzburg & Palacky University Olomouc

Oct 2022 – August 2024

Courses

- | | | |
|-------------------------------------|------------------------------------|---------------------------------|
| • Advance Remote Sensing | • Software Development | • Big Earth Data |
| • Data Science and Machine learning | • Method in Spatial Analysis | • Object Based Image Assessment |
| • GeoHumanitarian Action | • Design of Geospatial Data Models | • Application Development |

BS (Hons.) Geo-Informatics

Pir Mehr Ali Shah Arid Agriculture University

Sept 2015 – August 2019

Final year project titled "Automated Feature Extraction and Socioeconomic Parameter Estimation from Satellite Imagery using Deep Learning".

PROJECTS

Academic Projects

- Feature Detection Analysis Using EO- Custom Scripts from Sentinel 2 Image (CDE Semester Project)
- Temperature Time Series Analysis Using GEE (CDE Semester Project)
- Semantic EO Data Cube of Austria Analysis (CDE Semester Project)
- Site Suitability Analysis for Tourist Hotel in Austria (CDE Semester Project)
- Geomorphometrical Analysis of catchment around Taxenbach's southern part of Salzburg (CDE Semester Project)
- Visibility Analysis for Hotel in Salzburg (CDE Semester Project)
- Route Planning for waste collecting trucks using Network Analysis (CDE Semester Project)
- Automated Feature Extraction and Socioeconomic Parameter Estimation from Satellite Imagery using Deep Learning (FYP Bachelor's)
- Suitability Analysis for Wind Turbines in Chakri District (Bachelor's Semester Project)

Professional Projects

- Real Estate Transformation through Digitilization
Developing Location-based real estate application and portal that automate decision making process and maintain Transparency.
- Remote Sensing Analysis for Price Indexing in Real Estate
- 3D Visualization of Real Estate Properties Using Cesium and Geoserver
- Demographic and Feasibility Analysis of Real Estate Properties

TECHNICAL SKILLS

- ArcGIS Pro
- Adobe Illustrator
- JavaScript
- SQL (Spatial Queries)
- Geoserver
- QGIS
- Inkscape
- HTML/CSS
- PostgreSQL / PostGIS
- Deep Learning/CNN
- Google Earth Engine
- Python
- Ecognition
- Object Based Image Assessment
- AGOL

LANGUAGE SKILLS

- English(Fluent)
- German (A1)
- Urdu (Mother tongue)

SUMMER SCHOOLS & CONFERENCES

- GI-Salzburg23 Conference, International Forum for Geoinformatics (July 2023)
- Blended Intensive Course (BIP) - Participatory tools for urban nature planning and management, CIVIS program (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

- **Jakob Lobensteiner**
Chief Technological Officer | Riscognition | jakob.lobensteiner@riscognition.com | Professional Reference
- **Mr. Atiq Ullah**
Manager GIS | PropSure Digital Solutions | atiq.ullah@propsure.com.pk | Professional Reference
- **Dr. M. Hasan Ali Baig**
CAS Alumnus | Director | IGEO, UAAR | mhasanbaig@uaar.edu.pk | Academic Reference