Rafi Mahmud Tumon

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Objective

An MSc candidate in Geodesy and Geoinformation Science with demonstrated expertise in GIS, spatial analysis, and Python programming, seeking to leverage advanced technical skills and research experience in geospatial technology.

Education

Technical University Berlin — **Berlin, Germany**

Master of Science in Geodesy and Geoinformation Science — *October 2020 – Present*

- Specialization: Geoinformation Science

- Key Coursework: Photogrammetric Computer Vision, Geoinformatics, Geodatabases and Infrastructures, Space Geodesy, Adjustment Theory, Deep Learning for Geographical Data

Rajshahi University of Engineering and Technology — **Rajshahi, Bangladesh**

Bachelor's in Urban and Regional Planning — *March 2014 – November 2018*

Work Experience

OXG Glasfaser GmbH — **Berlin, Germany**

Working Student, Strategic Area Development — *June 2024 – Present*

- Perform comprehensive geographical data analysis using QGIS for optical fiber network deployment, including database quality assurance and competitor assessment, through implementation of automated Python models and streamlined QGIS workflows results in a 20% improvement in operational efficiency.

- Execute strategic cost-benefit analyses for network expansion projects, conducting geospatial assessments to identify optimal deployment areas and enhance infrastructure planning decisions.

Department of Civil Engineering, RUET — **Rajshahi, Bangladesh**

Project Assistant (GIS and Geospatial Planner) — *February 2020 – April 2020*

- Led the airport master planning using QGIS, optimizing regional connectivity through route analysis and transportation network design.

- Collaborated with engineering teams to integrate spatial analysis into transportation planning, ensuring optimal route efficiency.

Urban Development Directorate — **Rajshahi, Bangladesh**

Intern — *May 2018 – July 2018*

- Conducted the "Analysis of the Progress of Planned Urbanization" project for Bagha Upazilla, performing comprehensive socio-economic surveys and spatial analyses.

- Researched, analyzed, and collected data to create and maintain spreadsheets and dashboards, while providing support with assessments and administrative tasks.

Research Experience

Bachelor's Thesis

"Application of Remote Sensing and GIS for Vulnerability Assessment: A Case Study of Bogra, Sirajganj, and Tangail Districts"

- Used advanced satellite imaging and mapping software to analyze flooding risks and land coverage changes, developing vulnerability assessment methodologies.

Publication

"Identification of Determinant Factors Influencing Modal Choice Behavior and Satisfaction Level of Commuters: A case of Rajshahi City"
Trends in Civil Engineering and its Architecture, Lupine Publishers
DOI: 10.32474/TCEIA.2019.03.000171

Technical Skills

- **Core Technical:** GIS, Remote Sensing, Geospatial Analysis, Geodatabase Maintenance

- **QGIS:** Data Management, Coordinate Reference Systems, Map Creation and Cartography, Spatial Joins and Relationships, Plugin Usage, Database Connectivity, Processing Modeler, Python Scripting and Workflow Automation

- **Machine Learning, Deep Learning:** Supervised and Unsupervised Learning, Neural Network Fundamentals, Model Evaluation and Validation, Classification and Object Detection, CNN, Vision Transformer, Graph Neural Network

- **Programming:** Python (Pandas, Geopandas, Rasterio, OSMnx, Folium, Scikit-learn, Seaborn, Pytorch, Matplotlib), SQL, JavaScript

- **Tools & Software:** PostgreSQL/PostGIS, MATLAB, Google Earth Engine, Git, Jupyter Notebook, Excel

- **Web GIS:** Django, HTML, CSS, Leaflet, Bootstrap

- **Geospatial Expertise:** Engineering Survey, Least Squares Adjustment, Cartographic Principles, GNSS Processing, Environmental Analysis

Awards

Planning and Design of Compact Township, 2nd Runner Up

- Inter-University Undergraduate Planning Students Competition, BUET

Languages

English (Fluent), Bengali (Native), German (A2)