Shrabonti Zaman

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EDUCATION

Doctor of Philosophy| University of Tennessee, Knoxville 2024-2025 | CGPA 3.97
Specialization: Glacial-Hydrological Modeling using GIS and RS

- Courses took: GEOG 413: Remote Sensing of Environment, 414: Spatial Data Management, 433: Land Analysis/Landscape Plan, 434: Climatology, 436: Water Resources and 454: GIS for Terrain Analysis, 515 Topics in Quantitative Geography, Seminar in Geomorphology, Statistics for Research I
- Developing projects on Moraine dammed lakes and Glacial Lake outburst floods in the spatial analysis Lab of the department of geography and sustainability.

Master of Science| University of Dhaka | December 2023 | CGPA 3.60
Major: Physical Geography and Environment
Thesis: Groundwater Vulnerability Assessment and Contamination Risk Mapping in Narayanganj Sadar Upazila, Bangladesh Using GIS-based DRASTIC Modeling

- Acquired cademic knowledge regarding fluvial geomorphology, hydrology, paleogeomorphology and paleo- climatology, biodiversity conservation and climate change and human adaptation.
- Coordination with different government and non government organizations for environmental analysis and data collection, lithostratigraphic modeling, hydrological modeling.

Bachelor of Science| University of Dhaka | June 2022
Major: Geography and Environment
Minors: Soil Science, Geology and Botany

- CGPA 3.51 with final year GPA of 3.68

- Academic knowledge regarding the characteristics, classifications, and functionalities of the Physical and Human components of the Environment of different regions.
- Quantitative Techniques, Geodetic and Land Surveys, Map Reading and Interpretation for Geography and Environmental data acquisition and analysis, Geographic Information System (GIS) and Remote Sensing based geospatial and environmental analysis and modeling.

Research Interest: Glaciology, Hydrological Modeling, Remote Sensing, Climate Change.

RESEARCH EXPERIENCE

COURSE PROJECTS

Quantifying Glacial Retreat: Remote Sensing Approaches and Climate Correlations in Taku Glacier, Alaska.

- Sentinel-2 imagery and climate data was used to analyze glacier area changes and their correlation with temperature, precipitation, and evapotranspiration from 2018 to 2023

Leveraging Social Media Data to Estimate Flood Inundation Extent in the Aftermath of Hurricane Helene.

- Social media data and GIS techniques were utilized to map flood inundation surfaces by integrating flood height information from local news, self-identified locations, and USGS stream gauges.

MS THESIS

Groundwater Vulnerability Assessment and Contamination Risk Mapping in Narayanganj Sadar Upazila, Bangladesh Using GIS-based DRASTIC Modeling [2023]

- Assessed the groundwater level and pollution vulnerability using the DRASTIC method of modeling and constructed vulnerability zones ranging from least to most vulnerable.
- Identified the potential sources of groundwater vulnerability and their degree of influence.

FIELD STUDIES

Land Use Pattern and Socio-economic Status of Mandra Mouza, Munshiganj, Bangladesh. [2021]

- Observed the land use characteristics and the socio-economic state in the study area and analyzed the interrelationship between them through primary field data collection and questionnaire survey.

Geomorphological and Environmental Characteristics of Sonadia and Maheshkhali Islands. [2019]

- Conducted geomorphological, lithological, ocean and vegetation survey with different methods such as Boring data collection, DCP(Dynamic Core Penetration) survey, Bathymetric survey etc and generated the first LULC map of Sonadia Island.

Local People's Access to Safe Drinking Water: A Study in Coastal Areas of Bagerhat, Bangladesh [2018]

- Examined the condition of the drinking water quality and the impact of coastal salinity.

Application of Research Methods and Techniques : A Case Study in Jamdani Polli at Narayanganj Upazila, Bangladesh [2017]

- Conducted questionnaire survey regarding the socio-economic condition of the Jamdani weavers.

WORK EXPERIENCE

Graduate Teaching Assistant [August 2024 – Present]
Department of Geography and Sustainability, University of Tennessee, Knoxville
Courses Taught

- **GEOG 131** (Weather, Climate, and Climate Change) – Fall 2024
- **GEOG 132** (Landscapes and Environmental Change) – Spring 2025
- **GEOG 204** (Understanding Climate Change) – Fall 2025
- **GEOG 345** (People and Environment) – Fall 2025
- **GEOG** 331 (Natural Hazards) – Spring 2026
- **Fieldwork Conducted:** Atmospheric Pressure, Wind and Humidity Analysis, Adiabatic Processes, Weather forecasting, Energy Budgets and Urban climates, Topographic Maps, Slopes and Mass Movement, Soil Moisture Testing.

Health and Disaster Response Intern [August 2023- June 2024]
International Federation of Red Cross and Red Crescent Society

- Coordinated updated Dengue management training for medical officials in city corporations.
- Generated maps, leaflets, banners of Dengue response activities.

Geographic Information System Analyst Groupmappers [May 2020- February 2022]

- Analyzed and visualized Geospatial data for covid patients.
- Data input and analysis of Malaria patients in Dhaka.

Data Collector and Analyst Aspire to Innovate (a2i) [May 2020- April 2021]

- Collected Covid Patient geospatial data.
- Developed Covid-19 trend and risk zone map in Bangladesh.

SKILLS

Data Analysis and Visualization

- **PIX4Dmapper**
- **Leica Cyclone 360**
- **Google (Earth Engine, Earth Pro, Charts)**
- **Flourish**
- **Tableau**
- **SWAT**
- **Strater**
- **Canva**

Programming

- **Python**
- **SQL, DuckDB**
- **Geemap, Leafmap**
- **R**

Geographic Information System and Remote Sensing

- **ArcGIS**
- **ERDAS Imagine**

Additional Skills

- Capable of performing in a fast paced and high stressed environment with great attention to detail.
- Adept as both an independent worker and team player with the experience of efficaciously completing long and short-term projects.
- Conversational proficiency in French (CEFR B1)

LEADERSHIP AND GROUPWORKS

- Member of Dhaka University Environment club, French club, Chess club and Science Society. [2017-2023]
- Organized National Environmental Olympiad and Art Competition. [2017-2018]

SCHOLARSHIPS & AWARDS

- Graduate Fellowship by the University of Tennessee. [2024-2025]
- National Science and Technology Fellowship by the Ministry of Science and Technology, Government of Bangladesh [2022]
- Bangladesh Red Crescent Society Scholarship 2022-23 under BDRCS-Urban Resilience Building Trough Research, Knowledge and Innovation Project by the German Red Cross. [2022]
- Bangladesh Retired Government Employee Welfare Association Scholarship for Excellent Academic Performance [2021]