

MD. FARHAN RAFIQ

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EDUCATION

Master of Science (Thesis) in Oceanography

Feb 2024 - Dec 2025 (expected)

Shahjalal University of Science and Technology (SUST), Sylhet, Bangladesh

- CGPA: 3.78/4.00 (40/52 credits completed)

Bachelor of Science in Oceanography

Jan 2019 - Jan 2024

Shahjalal University of Science and Technology (SUST), Sylhet, Bangladesh

- CGPA: 3.66/4.00

RESEARCH INTEREST

Geographic Information System (GIS), Remote sensing, Oceanographic data science, Geospatial AI and predictive modeling, Climate change and environmental monitoring

RESEARCH EXPERIENCE

Research Assistant – Site Suitability Mapping for Seaweed Cultivation

Department of Oceanography, SUST

Sep 2023 - Feb 2024

Supervisor: Dr. Subrata Sarker, Associate Professor and Head

- Worked on the paper “*Site Suitability Mapping for Different Seaweed Cultivation Systems along the Coastal and Marine Waters of Bangladesh: A Generalized Additive Modelling Approach for Prediction*”
- Conducted GIS-based mapping and statistical analysis using R and ArcGIS.

Research Assistant – Marine Biodiversity Habitat Mapping for Saint Martin Island

Department of Oceanography, SUST

Mar 2022 - Aug 2022

Supervisor: Muhammad Mizanur Rahman, Assistant Professor

- Contributed to the study “*Marine Biodiversity Habitat Mapping for Saint Martin Island through integration of community knowledge and science*”
- Performed data collection, participatory mapping, and validation of habitat distribution.

RESEARCH PROJECTS

Integrated Modelling of Urban Flood Risk in Chattogram: Application of TOPSIS, Machine Learning and Spatial Analysis Approaches

Masters' Thesis (Defense scheduled for 18 Dec 2025)

Jun 2025 - Dec 2025 (expected)

- Developing a hybrid model integrating TOPSIS and machine learning for flood risk assessment.
- Leveraging ArcMap, Python, and Google Earth Engine to analyze spatial and socioeconomic data.

Spatial and Temporal Variability of PAR, Kd_490 and SST in the Bangladesh Exclusive Economic Zone (2016-2022)

Undergraduate Research Project

Dec 2023

- Analyzed 7-year ocean color and thermal data using SeaDAS and ArcGIS to evaluate productivity patterns.
- Investigated spatial and temporal trends influencing marine ecosystem productivity.

Quantitative Analysis of Annual Chlorophyll-a and Sea Surface Temperature Fluctuations in the Bay of Bengal Using Remote Sensing Data

Mini Project under “Remote Sensing and Satellite Oceanography” coursework

Jun 2023

- Examined seasonal patterns of Chlorophyll-a and SST using MODIS-Aqua datasets.
- Developed geospatial visualizations using SNAP and ArcMap.

SKILLS

Geospatial Analysis and Remote Sensing

- **ArcGIS:** Spatial analysis, geoprocessing, cartographic design for environmental mapping
- **SeaDAS/SNAP, ODV:** Ocean color data preprocessing, image classification, radiometric correction
- **Google Earth Engine:** Cloud-based satellite data processing and time-series analysis
- **ERDAS Imagine:** Raster analysis and image classification

Programming and Data Analysis

- **Python:** Data analysis and visualization (Pandas, NumPy, Matplotlib, Scikit-learn)
- **R:** Spatial data analysis, statistical modelling, and map-based visualization
- **Microsoft Excel:** Advanced data management, dashboards, and PivotTable analytics

Oceanographic and Field Instruments

- Skilled in using CTD, ADCP, Plankton Net, Multi-parameter Water Probe, and AlgaeTorch for marine sampling and in-situ measurements

INTERNSHIP

Marine Phytoplankton Study in the Bay of Bengal

Mar 2025

Bangladesh Fisheries Research Institute (BFRI), Cox's Bazar, Bangladesh

- Conducted phytoplankton culture, growth monitoring, and microscopic identification.
- Performed field sampling, specimen preservation, and isolation techniques.

HONOURS AND AWARDS

National Science and Technology (NST) Fellowship

Apr 2025

Ministry of Science and Technology, Government of Bangladesh

- A prestigious research grant, awarded to support my masters' thesis

CERTIFICATIONS

- "Going Places with Spatial Analysis" – *ESRI (Online)* Mar 2025
- "Spatial Analysis and Satellite Imagery in GIS" – *University of Toronto – Coursera* Nov 2023
- "Volunteer" – *International Symposium on Marine Resource Management, SUST* Mar 2023
- "Cartography" – *ESRI (Online)* Mar 2022

LANGUAGES

- Bengali (Native)
- English

REFERENCES

• Dr. Subrata Sarker

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• Abu Bokkar Siddique

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