

Md. Farhan Rafiq

Naogaon, Bangladesh | Phone: +8801717241308 | Email: farhanrafiq.ocg@gmail.com

LinkedIn: [farhanrafiq153](https://www.linkedin.com/in/farhanrafiq153) | Website: farhan-rafiq.github.io

Education

Master of Science (Thesis) in Oceanography

Feb 2024 – Jan 2026

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

- **CGPA:** 3.83/4.00
- **Thesis:** *Urban Flood Risk Modelling in Chattogram using TOPSIS, Machine Learning, and Spatial Analysis*
- **Award:** National Science and Technology (NST) Fellowship, Bangladesh, 2025

Bachelor of Science (Honours) in Oceanography

Jan 2019 – Jan 2024

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

- **CGPA:** 3.66/4.00

Research Interests

Geographic Information System (GIS), Remote Sensing, Oceanographic Data Science, Geospatial AI and Predictive Modeling, Climate Change and Environmental Monitoring

Research Experience

Research Assistant, Monitoring of Ecohydrological Variables in the Meghna River Estuary

Department of Oceanography, SUST

Dec 2025 – Present

- Conducting ecohydrological monitoring and GIS based spatial analysis of estuarine variables.
- Integrating in situ observations with time series and geospatial analysis for environmental assessment.

Marine Research Intern, Phytoplankton Study in the Bay of Bengal

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

Mar 2025

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

Research Assistant, Site Suitability Mapping for Seaweed Cultivation

Department of Oceanography, SUST

Sep 2023 – Feb 2024

- Developed GIS based site suitability models using multi criteria spatial decision frameworks.
- Performed spatial validation and statistical analysis for sustainable aquaculture planning.

Research Projects

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

Master's Thesis

Mar 2025 – Dec 2025

- Integrated machine learning algorithms with TOPSIS for urban flood risk modeling.
- Produced GIS based flood hazard, vulnerability, and risk maps to identify high risk zones.

Spatial and Temporal Variability of PAR, Kd₄₉₀, and SST in the Bangladesh EEZ (2016–2022)

Undergraduate Research Project

Jul 2023 – Dec 2023

- Analyzed seven years of MODIS Aqua ocean color and SST data using SeaDAS and ArcGIS.
- Evaluated spatial and temporal productivity patterns affecting marine ecosystems.

Conference Publications

Md. Farhan Rafiq, Abu Bokkar Siddique (2025).

Spatial and Temporal Dynamics of PAR, K_d ₄₉₀, and SST in the Bangladesh EEZ (2016–2022). In Proceedings of the 18th International Conference on Engineering and Natural Sciences (ICENS 2025), pp. 708–722. Liberty Academic Publishing House, New York, USA. ISBN: 979-8-89695-279-4.

Academic Engagement

International Symposium on Marine Resource Management (ISMARM)

Mar 2023

Organized by Department of Oceanography, SUST

- Participated in technical sessions and discussions on marine resource management and coastal sustainability.
- Supported symposium logistics, session coordination, and participant facilitation during the event.

Technical Skills

Geospatial Analysis and Remote Sensing: ArcGIS, SeaDAS, SNAP, ERDAS Imagine, Google Earth Engine, ODV, Delft3D, cartographic design, time series analysis, satellite image preprocessing and classifications.

Programming and Data Analysis: Python (Pandas, NumPy, Matplotlib, Scikit-learn), R, MATLAB, and Microsoft Excel analytics.

Oceanographic and Field Instruments: CTD, ADCP, Niskin bottles, multiparameter water probe, AlgaeTorch.

Digital and Research Tools: Power BI, LaTeX, Mendeley, SPSS, Kobo Toolbox, Google Earth Pro, Canva Pro, Adobe Illustrator.

Language

- **Bangla:** Native
- **English:** Proficient

Honors and Awards

National Science and Technology Fellowship

Granted by Ministry of Science and Technology, Government of Bangladesh

Apr 2025

- Competitive national research funding, awarded for master's thesis in environmental risk analysis.

Certifications

- | | |
|---|----------|
| • Going Places with Spatial Analysis , ESRI | Mar 2025 |
| • Databases and SQL for Data Science with Python , IBM, Coursera | Feb 2024 |
| • Spatial Analysis and Satellite Imagery in GIS , University of Toronto | Nov 2023 |
| • Data Analysis with Python , IBM, Coursera | Oct 2023 |
| • Preparing Data for Analysis with Microsoft Excel , Microsoft, Coursera | Oct 2023 |
| • Cartography , ESRI | Mar 2022 |

References

Dr. Subrata Sarker, Associate Professor and Head, Department of Oceanography, SUST

Phone: +8801710417753 | Email: subratasrk-ocg@sust.edu

Abu Bokkar Siddique, Assistant Professor, Department of Oceanography, SUST

Phone: +8801621492408 | Email: absiddique-ocg@sust.edu