

# Md. Farhan Rafiq

📍 Naogaon, Bangladesh

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## Education

### Master of Science (Thesis) in Oceanography

Feb 2024 – Dec 2025

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

- **CGPA:** 3.83/4.00

### Bachelor of Science (Honours) in Oceanography

Jan 2019 – Dec 2023

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

- **CGPA:** 3.66/4.00

## Research Interests

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

## Research Experience

### Research Assistant

Dec 2025 – Present

*Monitoring of Ecohydrological Variables in the Meghna River Estuary*

Department of Oceanography, SUST

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

### Master's Thesis

Dec 2025

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

- 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.

### Marine Research Intern

Mar 2025

*Phytoplankton Study in the Bay of Bengal*

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

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

### Undergraduate Research Project

Dec 2023

*Spatial and Temporal Variability of PAR,  $K_d_{490}$ , and SST in the Bangladesh EEZ (2016–2022)*

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

### Mini Project under "Remote Sensing" coursework

Jun 2023

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

- Applied satellite data to analyze seasonal trends in Chlorophyll-a and SST in the Bay of Bengal.
- Created detailed geospatial visualizations using SNAP and ArcMap.

## Conference Publications

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

*Spatial and Temporal Dynamics of PAR,  $K_d$ <sub>490</sub>, 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

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**International Symposium on Marine Resource Management (ISMRRM)**

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

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<b>Geospatial Analysis and Remote Sensing:</b>	ArcGIS, SeaDAS, SNAP, ODV, Delft3D, ERDAS Imagine, Google Earth Engine
<b>Programming and Data Analysis:</b>	Python (Pandas, NumPy, Matplotlib, Scikit-learn), R, MATLAB, and Microsoft Excel analytics
<b>Oceanographic and Field Instruments:</b>	CTD, ADCP, Water Multi-parameter, AlgaeTorch
<b>Digital and Research Tools:</b>	Power BI, LaTeX, Mendeley, SPSS, Kobo Toolbox, Google Earth Pro, Canva Pro, Adobe Illustrator

## Language

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

## Honors and Awards

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**National Science and Technology Fellowship**

Apr 2025

*Granted by Ministry of Science and Technology, Government of Bangladesh*

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

## Certifications

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

## References

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