

# MUSHRUFU MUSHREEN WINEY

Institute of Water and Flood Management, BUET, Dhaka-1000  
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## EDUCATION

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### Master of Science in Climate Modeling and Risk Management

Institute of Water and Flood Management  
Bangladesh University of Engineering and Technology

June 2023 - Present  
Dhaka, Bangladesh

### Bachelor of Science in Water Resources Engineering

Bangladesh University of Engineering and Technology  
CGPA : 3.94/4.00 (Last 4 semesters: 3.99)

March 2018 - May 2023  
Dhaka, Bangladesh

## RESEARCH INTERESTS

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- Hydro-climatology
- Climate Change and Adaptation
- Impacts of Climate Change on Hydrometeorological Extremes
- Climate and Earth Systems Modeling (including Predictions and Projections)
- Hydrology at Basin-Scale
- Application of Remote Sensing in hydrology and climatology
- Machine Learning and Hydro-informatics

## PROFESSIONAL EXPERIENCES

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### Lecturer

[Institute of Water and Flood Management](#)  
Bangladesh University of Engineering and Technology

December 2023 - Present  
Dhaka, Bangladesh

### Research Assistant

[Institute of Water and Flood Management, BUET](#)

June 2023 – December 2023  
Dhaka, Bangladesh

**Project Title:** Enhancing Coastal Resilience Through Nature-Based Solutions.

### Intern

[Institute of Water Modeling](#)

November 2022 – November 2022  
Dhaka, Bangladesh

### Major Tasks:

- **Trend analysis** of surface water and groundwater data.
- Assessing inconsistency in rainfall data (Development of **Double Mass Curves**)
- Basics of groundwater modeling with **MIKE-SHE**
- Report Writing

## RESEARCH EXPERIENCES

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- **PUBLICATIONS** Winey, M.M., Shahariar, S., Hossain, M.P., Munna, M.S.A., Bipul, T.A. (2023). ASSESSMENT OF THE IMPACT OF STRUCTURAL INTERVENTION ON RIVERBANK EROSION-ACCRETION AND BAR DYNAMICS OF THE NORTH-WESTERN PART OF THE GANGES RIVER USING REMOTE SENSING TECHNIQUE. *7th International Conference on Civil Engineering for Sustainable Development (ICCESD 2024)*
- **UNDERGRAD THESIS** Winey, M.M., (2023). Development of a Groundwater Model for Dhaka City using MODFLOW to Assess Groundwater Level Depletions.  
**Thesis Objectives:** To develop a groundwater model to simulate and predict the extent of groundwater depletion in Dhaka City using Visual MODFLOW Flex interface  
**Research Area:** Groundwater Hydrology  
**Thesis Supervisor:** [Dr. Anika Yunus](#)

- **RESEARCH PROJECT** Enhancing Coastal Resilience Through Nature-Based Solutions.  
**Major Tasks:**
  1. Assessment of **Climate Change Projections** for the coastal zone of Bangladesh utilizing **Python and R** programming languages.
  2. Assessment of **Projected Climate Extremes** for the coastal towns of Bangladesh using **RclimDex** Package within **R** programming environment
  3. Development of **Intensity-Duration-Frequency (IDF) Curves** for observations as well as climate projections for the coastal towns of Bangladesh.
  4. Assessment of **Population Projections, Land Use and Land Cover Changes, Solid Waste and Wastewater Generation** for the coastal towns of Bangladesh utilizing **QGIS**.**Principal Investigator:** [Dr. A.K.M Saiful Islam](#)

## ACADEMIC PROJECTS

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### Hydrological Modelling of Sangu River Using HEC-HMS

**Objectives:** To develop a calibrated **hydrological model** for the **Sangu River basin**. The objective is fulfilled by developing a rating curve for irregularly recorded discharge of the basin.

### ASSESSMENT OF THE IMPACT OF STRUCTURAL INTERVENTION ON RIVERBANK EROSION-ACCRETION AND BAR DYNAMICS OF THE NORTHWESTERN PART OF THE GANGES RIVER USING REMOTE SENSING

**Objectives:** To assess the impact of structural intervention on river morpho-dynamics of the North-western part of the Ganges River. The objective is fulfilled by analyzing the erosion-accretion rate of river bankline before and after construction of Lalon Shah Bridge

## HONOURS AND AWARDS

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- **University Merit Scholarship** for Level 3 and Level 4
- **Dean's Listed** (CGPA higher than 3.75/4.00) for all Levels from Level 1 to Level 4
- **Board Scholarship (Talentpool)** for Higher-secondary School Certificate Examination (H.S.C.), 2017
- **Board Scholarship (General)** for Secondary School Certificate Examination (S.S.C.), 2015

## TECHNOLOGY SKILLS

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<b>Programming Languages</b>	R, Python, MATLAB
<b>Softwares</b>	HEC-HMS, HEC-RAS, MODFLOW, RockWorks, RclimDex, SWMM, ArcGIS, QGIS, AutoCAD, SAP-2000, CSI ETABS, GRASP, Google Earth Engine, Delft-3D
<b>Proficiency</b>	MS Word, MS Excel, MS Powerpoint, Windows OS,
<b>Soft Skills</b>	Report Writing, Presentation, Engineering Drawing,

## EXTRACURRICULAR ACTIVITIES

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- **Participant**, Panel Discussion Session on “Enhancing Coastal Resilience Through Nature-Based Solutions” in **9th International Conference on Water and Flood Management (ICWFM 2023)**
- **Member**, [WRE Forum](#)
- **Student Coordinator**, Hydro War 2.0, BUET WRE FEST 2023, BUET
- **Volunteer**, BUET WRE FEST 2018, BUET

## TEST SCORES

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**TOEFL iBT**      109 (R30, L28, S23 and W28)

October 2023