Zayed Bin Saif

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EDUCATION

M.Sc. in Earth & Environmental Science (in progress, expected May 2027)

University of Kentucky, USA

B.Sc. in Water Resources Engineering (2016)

Bangladesh University of Engineering & Technology (BUET), Dhaka, Bangladesh

PROFESSIONAL SUMMARY

- Skilled in hydrological modelling, hydraulic structure design, and field-based data collection.
- Currently developing a SWAT+ hydrological model for the Kentucky River Basin under the NSF EPSCoR CLIMBS project.
- Voluntary participant, Meghna Water Futures Programme (WFP): Engaging Youth for River Conservation, organized by the International Union for Conservation of Nature (IUCN).

AREAS OF INTEREST

Integrated surface and groundwater modelling · Climate-change impacts on water resources · Transboundary water resources management · Machine learning applications in hydrology · Sustainable water resources planning

PROFESSIONAL EXPERIENCE

Graduate Research Assistant — National Science Foundation (NSF) EPSCoR CLIMBS Project, University of Kentucky, USA

August 2025 – Present

- Developing hydrological models (SWAT+) to assess water availability and quantify water budgets for the Kentucky River Basin.
- Processing and analyzing climate, hydrologic, and earth-observation datasets using Python and GIS to support research and reporting.

Sub-Divisional Engineer — Joint Rivers Commission, Bangladesh

January 2023 – July 2025

- Conducted spatial analysis of transboundary river morphology and flow.
- Monitored water quality of transboundary rivers.
- Reported on Sustainable Development Goal (SDG) indicator 6.5.2 (transboundary water cooperation).
- Contributed to developing international treaties and memorandums of understanding (MoUs).
- Assisted in organizing bilateral meetings and negotiations.

Assistant Engineer — Bangladesh Water Development Board

October 2018 – January 2023

- Conducted field surveys and engaged with rural communities to gather data.
- Performed hydrological model analysis for the design of small hydraulic structures (regulators, culverts, bridges).
- Designed embankments and bank protection works for coastal areas in Bangladesh.
- Monitored and supervised contractors' work for the construction of embankments and riverbank protection works.

Junior Design Engineer — Blue Gold Program

April 2017 – July 2018

- Assisted in designing hydraulic structures and data collection.

INTERNATIONAL SEMINARS & PRESENTATIONS

- Presenter, 10th International Conference on Water and Flood Management (ICWFM), Dhaka, Bangladesh (February 2025).
- Presenter, Meghna Water Futures Programme (WFP): Engaging Youth for River Conservation, organized by the International Union for Conservation of Nature (IUCN), Kathmandu, Nepal (November 2023).
- Country Representative, Global Workshop on Conjunctive Management of Surface Water and Groundwater, Geneva, Switzerland (October 2023).

PUBLICATIONS

1. **Zayed Bin Saif**; "Teesta Basin Water Use: Agriculture and Hydropower", published by the Ministry of Water Resources, Bangladesh, on the occasion of World Water Day 2024.
2. **Zayed Bin Saif**, Mohammad A. Hossen, Shahid M. Islam, "Optimizing Transboundary Water Dispute Resolution: Assessing the Effectiveness of Benefit Sharing Method", *Proceedings of the 10th International Conference on Water and Flood Management (ICWFM), BUET, 2024.*
3. Md. Shibber Hossain; **Zayed Bin Saif**, "The Ganges Water Sharing Dispute: A Case Study on the Transboundary Water Cooperation between India and Bangladesh." *Proceedings of the 9th International Conference on Water and Flood Management (ICWFM), BUET, 2023.*
4. Md. Shibber Hossain; **Zayed Bin Saif**, Md. Salehin Sharif, "Morphological Response of the Ganges River at Hardinge Bridge to the Water Received as per the Ganges Water Sharing Treaty, 1996 Using HEC-RAS", *Proceedings of the 9th International Conference on Water and Flood Management (ICWFM), BUET, 2023.*

Undergraduate Thesis: "A Laboratory Study on Hydraulic Impacts of Sand Mining on River Bed and Bank."

TECHNICAL SKILLS

Software

- Expertise: SWAT+, HEC-RAS, HEC-HMS, QGIS, AutoCAD
- Working experience: Delft3D, MIKE-SHE
- Professional training: WEAP, SAP, ETABS

Programming Languages

- Working experience: Python, R, LaTeX
- Working knowledge: MATLAB, C++

LANGUAGES

Bangla (Native) · English (Professional working proficiency) · Hindi (Listening, Speaking) · Arabic (Listening, Reading)

INTERESTS

Chess, Badminton, Cricket