

AHMED HOSSAIN

☎ +966 56 163 0282 | ✉ ahmed.hossain100@gmail.com | 🌐 [linkedin.com/in/ahmed-hossain-bb0262198/](https://www.linkedin.com/in/ahmed-hossain-bb0262198/)

OBJECTIVES

Civil Engineer with expertise in **Geotechnical and Water Resources Engineering**, specializing in **infrastructure development, embankment stability, and foundation design**. Skilled in **FEM-based analysis, AutoCAD, and Civil 3D**, with hands-on experience in **flood mapping and hydrologic assessments**. Currently based in **Saudi Arabia** with a **valid transferable Iqama**, seeking opportunities in **Geotechnical, Civil Infrastructure, or Water Resources projects**.

KEY SKILLS AND EXPERTISE

Geotechnical Engineering: Embankment stability, settlement analysis, foundation design

Water Resources Engineering: Flood inundation mapping, hydrologic & climatic analysis

Infrastructure Development: Civil and Railway Infrastructure projects

Software & Tools: AutoCAD, Civil 3D, Plaxis, ArcGIS, Google Earth Pro, HEC-RAS, Python, Microsoft Excel

Technical Expertise: FEM analysis, ground improvement (PVD, CMP), soil-structure interaction, Flood Management

Project Experience: Field data analysis, design calculations, consultancy reporting, project management

SELECTED ENGINEERING PROJECTS

Padma Bridge Rail Link Project (with AECOM, Bangladesh)

Delivered optimized **settlement and stability designs** for railway embankments over soft soil strata (1m–12m) using **Plaxis and GeoStudio**. Applied **ground improvement techniques** including Prefabricated Vertical Drains (PVD) and Cement Mixed Piles (CMP), and conducted **pile bearing capacity analysis** using AASHTO and Meyerhof methods.

Flood Inundation Mapping – Institute of Water & Flood Management (IWFM, BUET)

Analyzed **hydrologic and meteorologic conditions** of Bangladesh and upstream India to produce **flood risk maps**. Supported community-level vulnerability assessments and infrastructure planning under a USAID-funded global academic collaboration.

Integrated Hazard Forecasting System – FOREWARN Bangladesh

Designed and prototyped a **GIS-based platform** for forecasting flash floods, heatwaves, cyclone-induced rainfall, and landslides. Developed a **rainfall estimation model** for Meghalaya, India, improving cross-border flood preparedness for Northeastern Bangladesh.

PROFESSIONAL EXPERIENCE

Research Scientist

Centre for Resilience and Youth | Dhaka, Bangladesh

Jun 2024 – Jun 2025

- Contributed to **flood forecasting and early warning systems**, supporting resilience initiatives.
- Developed a **rainfall estimation model** for upstream India to enhance flood preparedness.
- Designed an **Integrated Hazard Forecasting System** with GIS-based outputs, supporting decision-making.
- Contributed in different projects of Start Network and FOREWARN Bangladesh to meet their **Water Resources Engineering** based needs

Technical Consultant

Start Network (Funded by ELRHA, in collaboration with UCL)

Jun 2024 – Jan 2025

- Conducted **hydrologic and climatic analyses** to assess flood vulnerability and agricultural risks.
- Supported the design of data-driven platforms (**Agricultural Information System**) integrating engineering insights for water resources planning.

Graduate Research Assistant – Water & Flood Management

Institute of Water & Flood Management (IWFM), BUET | Dhaka, Bangladesh

Apr 2022 – Feb 2024

- Analyzed **hydrologic and meteorologic conditions** driving floods in Bangladesh and upstream India.
- Produced **flood inundation maps** to evaluate community and agricultural vulnerability.
- Completed a **Master’s thesis** under the USAID-funded project “Academic Alliance of Anticipatory Action”.

Lecturer (Part-Time)

Presidency University, Bangladesh | Dhaka, Bangladesh

Oct 2020 – May 2022

- Taught Civil Engineering courses including **GIS Lab, Reinforced Concrete Fundamentals, and Structural Design.**
- Guided students in practical applications of **geotechnical and structural design concepts.**

Junior Project Engineer – Geotechnical Engineering

Bureau of Research, Testing and Consultancy (BRTC), BUET
Padma Bridge Rail Link Project | Dhaka, Bangladesh

May 2019 – Jun 2021

- Delivered optimized **settlement and stability designs** for railway embankments over soft soil strata (1m–12m) using analytical methods and FEM simulations in **Plaxis and GeoStudio.**
- Applied **ground improvement techniques** (Prefabricated Vertical Drains & Cement Mixed Piles) to improve stability and reduce consolidation time.
- Conducted **bearing capacity analysis** of driven piles using **AASHTO and Meyerhof methods**, ensuring cost-effective and reliable foundations.
- Managed design calculations, technical drawings, and consultancy reviews of **CREC and AECOM**, ensuring compliance with standards and client requirements.

EDUCATION

M.Sc.	Institute of Water and Flood Management (BUET), Water Resources Development Cumulative GPA: 3.75/4.00	Jul 2021 to June 2024
B.Sc.	Bangladesh University of Engineering and Technology (BUET), Civil Engineering Cumulative GPA: 3.71/4.00	Feb 2015 to Apr 2019

LANGUAGE PROFICIENCY

International English Learning Testing Service (IELTS): 8 (R: 9, L: 9, W: 6.5, S: 7)

AWARDS AND ACHIEVEMENTS

2nd Runner Up Disaster Hackathon 1.0 organized by FOREWARN, Start Network	2023
Dean’s Award For Maintaining equal or more that 3.75 GPA in one Academic Year	2017 to 2018
2nd Runner Up Poster Competition organized by Water Resources Department of BUET	2017
Champion Poster Presentation organized by Civil Engineering Department of NSU	2017

REFERENCES

Dr. Mashfiqus Salehin , Professor Institute of Water and Flood Management Bangladesh University of Engineering and Technology Email: msalehin1968@gmail.com	Dr. Mohammad Shariful Islam , Professor Department of Civil Engineering Bangladesh University of Engineering and Technology Email: msharifulbd@gmail.com
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