

Sahea Maharuj Mahadi

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Academic Credentials

M.Sc. Engg. in Civil and Geotechnical Engineering- June 2024- Present

Bachelor of Science in Civil Engineering- April 2019- June 2024

Bangladesh University of Engineering and Technology (BUET), Dhaka-1000, Bangladesh

CGPA: 3.51/4.00 (Last two terms: 3.61 and 3.86)

Research Interest

- Slope Protection & Riverbank Stability
- Bioengineering Applications in Soil
- Urban Infrastructure, Air Pollution, Machine Learning and Data Analytics
- Earthquake Engineering
- Numerical Modeling (LEM/FEM)

Undergraduate Thesis

Title: Stability Analysis of Riverbank Using the Limit Equilibrium Method (LEM) and the Finite Element Method (FEM).

Supervisor: Professor Dr. Mohammad Shariful Islam, Department of CIVIL Engineering, BUET.

Laboratory: Geotechnical Lab in BUET

- Performed and analyzed essential soil parameter tests (Standard Proctor, Grain Size Analysis, Direct Shear Test) according to ASTM standards.
- Modeled riverbank slope stability using LEM (SLIDE) and FEM (PLAXIS 2D).
- Investigated failure surfaces, safety factors, and deformation patterns under varying soil and hydraulic conditions.
- Conducted comparative analysis of LEM vs FEM behavior to identify critical slip mechanisms.

Research Manuscripts (In Preparation)

Mahadi, S. M. M., Islam, M. S.

“A COMPARISON STUDY ON THE STABILITY OF FENI RIVERBANK USING THE LIMIT EQUILIBRIUM METHOD AND THE FINITE ELEMENT METHOD”

Relevant Course Content

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| • Principles of Soil Mechanics | • Structural Analysis and Design (I & II) |
| • Foundation Engineering | • Numerical Methods |
| • Earth Retaining Structures | • Environmental Engineering (I & II) |
| • Elementary Soil Dynamics & Dynamics of Structure | • Hydrology, Irrigation and Flood Management |

Job Experience (Selected)

Assistant Engineer, SINAMM Engineering Limited (September 2024- October 2025)

Project Experience:

- **132 kV Substation Buildings (Bashila & Hatirjheel) – TBEA / DPDC**
Prepared BOQs, estimates, and tender documents; developed MS Project schedules; coordinated

technical clarifications with DPDC and foreign contractors.

- **200 MLD Pagla Sewage Treatment Plant (STP) – VA Tech Wabag**
Prepared technical submissions for the DBO package; performed quantity estimation and rate analysis; supported site assessments and financial modeling.
- **33 kV Substation Building, Baily Road (ESPSN Project) – TBEA / DPDC**
Assisted in tender preparation and planning documents; conducted quantity takeoff; reviewed structural drawings and supported schedule alignment.
- **Development of Bus Depot and Terminal in Fulbaria, Dhaka — BUET, Capstone Project**
Designed a modern bus depot integrating geotechnical, structural, transportation, and environmental engineering. Developed project proposals, feasibility analysis, 3D models, BOQs, and tender documents, gaining hands-on experience in full project lifecycle management.

Technical Skills

- **PLAXIS 2D, SLIDE:** Slope Stability Analysis
- **AutoCAD, SAP, ETABS:** Drawing, Structural Analysis, Design of Bridge and Building
- **Programming Language:** C++, MATLAB
- **Office Tools:** MS Word, MS Excel, MS PowerPoint, MS Project

Linguistic Proficiency

- Bangla: Native Language
- English: Fluent Working Proficiency

Honors and Awards

- General Scholarship in Higher Secondary School Certificate Examination (2018)
- WEWB govt. Scholarship (2022)
- Awarded trophy and medal from Director of Students' Welfare for outstanding team performance, Runner-up, Intra-University Faculty Cricket Tournament, BUET (2020)

Interpersonal Skills

- Player of the CIVIL Faculty Cricket Team and Hall Football Team, BUET (2019-2021)
- Member of the Public University Students Association of Chhagalnaiya, Guided students on academic and professional development; organized educational programs and events such as science fairs to promote learning and innovation (2019-2024)
- Performer & Event Coordinator, Civil Fest 2023, BUET.
- Private Tutor, Mentor for Higher secondary students in Mathematics, Physics, Chemistry (2019-2025)

References

- **Dr. Mohammad Shariful Islam**
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Bangladesh University of Engineering and Technology (BUET), Dhaka-1000, Bangladesh
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- **Dr. Rupak Mutsuddy**
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