Md Abu Sayed

M.Sc. student in Civil Engineering, Technical University of Darmstadt

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Profile

Master's student in civil engineering at TU Darmstadt with a structural engineering background from CUET, Bangladesh. Interested in seismic design, finite element and computational methods, and machine learning for structures. Co-author of a Springer Water book chapter on river hydrology.

Research Interests

Seismic analysis and design · Finite element and computational mechanics · Machine learning in earthquake engineering · Structural health monitoring and damage detection · Blast-resistant structures · Intelligent transportation systems

Education

since Oct 2026 — **M.Sc. Civil Engineering**, Technical University of Darmstadt, Germany

– Planned focus: structural analysis, concrete and steel construction, computational methods

– Current modules: Structural Analysis III; Artificial Intelligence for the Building Industry; interdisciplinary project TreeWatch Ostpark

Feb 2020 – Jul 2025 — **B.Sc. Civil Engineering**, Chittagong University of Engineering & Technology (CUET), Bangladesh

– CGPA 3.06 / 4.00; specialization in structural engineering; degree recognized in Germany (anabin H+)

– Thesis: *Vertical Extension of a Civil Engineering Building*, supervised by Prof. Dr. Muhammad Abdur Rahman Bhuiyan

Publication

2025 — Md. Reaz Akter Mullick, Shyamal Acharya, Md. Hazrat Ali, **Md. Abu Sayed**, Saima Zaheen: *Assessment of Hydrologic Alteration of the Ganges River in Bangladesh: Pre- and Post-Farakka Barrage and Treaty Scenario*. 9th International Conference on Water and Flood Management (ICWFM), BUET. Springer Water. doi:10.1007/978-3-031-93350-9_1

Poster Presentation

2023 — *Risk Assessment of Rooppur Nuclear Power Plant and the Future of the Padma River*. Research Fair, CUET

Research and Academic Projects

since Oct 2026 — **TreeWatch Ostpark** (ongoing), interdisciplinary project with the Remote Sensing and Image Analysis group, TU Darmstadt

– Remote-sensing assessment of tree vitality near a construction site in Frankfurt's Ostpark (airborne LiDAR, multispectral imagery, satellite time series)

– My part: multispectral analysis (PlanetScope imagery, NDVI/NDRE in QGIS) and coordinating our task group

Sep 2024 – Jul 2025 — **B.Sc. thesis: Vertical extension of a civil engineering building**, CUET

– Seven-storey composite steel extension over a three-storey RC building from 1968, on its own foundation so the existing frame carries no added load

	– Design to BNBC 2020 (LRFD) in ETABS and IDEA StatiCa; seismic evaluation following the PWD BSPP manual
Nov 2024	**Structural design of a G+4 residential building**, PinkCity, Raozan, Chattogram – Load calculation, ETABS model, design of beams, columns, slabs and foundations to BNBC 2020
Oct 2023	**Engineering classification of soil**, Sughandha R/A, Chattogram – Field sampling and laboratory testing; classification to ASTM D2487-11 for foundation design
B.Sc. coursework	**Water quality of the Karnafuli River** near Shah Amanat Bridge, Chattogram – Eleven physicochemical and biological parameters, assessed against ECR 1997 and WHO guidelines

Practical Training and Academic Service

Dec 2024	**Industrial training**, Local Government Engineering Department (LGED), Bangladesh – Three weeks on public infrastructure sites in Chattogram, Feni and Noakhali: project execution, quality control, site supervision
Mar 2022 – Jun 2024	**Technical Lead**, American Concrete Institute (ACI) Student Chapter, CUET – Built and maintained the chapter website and coordinated the technical team for chapter events

Scholarships

2019	Government Scholarship and Dutch-Bangla Bank Scholarship, Higher Secondary Certificate (HSC)
2017	Dutch-Bangla Bank Scholarship (need- and merit-based), Secondary School Certificate (SSC)
2014, 2011	Government Scholarships, Junior School Certificate (JSC) and Primary Education Completion (PEC)

Certificates

Sep 2025	CS50's Introduction to Programming with Python, Harvard University
Apr 2025	Software-Aided Civil Engineering Design and Analysis (AutoCAD, ETABS, HEC-HMS, SewerGEMS, Plaxis), EDGE Project, CUET

Skills

Engineering software	ETABS, IDEA StatiCa (basic), AutoCAD, Plaxis, SewerGEMS, HEC-HMS, IHA (Indicators of Hydrologic Alteration)
Programming	Python, TypeScript, Rust, Git, LaTeX
Languages	Bengali (native) · English C1 (TOEFL iBT 94/120) · German A1 (in progress, TU Darmstadt language course)

Academic References

Prof. Dr. Muhammad Abdur Rahman Bhuiyan, Department of Civil Engineering, CUET (thesis supervisor)

arbhuiyance@cuet.ac.bd

Prof. Dr. Md Aftabur Rahman, Department of Civil Engineering, CUET (course teacher)

maftabur@cuet.ac.bd