Raied Ahmed Nishat

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PROFESSIONAL PROFILE

Motivated civil and environmental engineering researcher with experience in both laboratory-based and computational studies. Currently working under as a Graduate Research Assistant at the Department of Civil and Environmental Engineering at SUST, on ground improvement and soil stabilization experiments, alongside machine learning applications for predicting soil behavior. I aim to pursue graduate research that advances intelligent, data-driven approaches in civil and environmental engineering.

Research Experience

Research Assistant   **2024 - Present**

Geotechnical Engineering Research Group, Department of Civil and Environmental Engineering, SUST
Supervisor: Prof. Dr. Shriful Islam

- Engaged in both laboratory-based and computational research on geotechnical materials and soil behavior.
- Exploring both traditional geotechnical testing as well as machine learning applications in soil property prediction and modeling.
- Assisting in experimental setup, data analysis, and research article preparation for ongoing projects.

EDUCATION

BSc (Engg.) in Civil and Environmental Engineering   **2020 - 2025**

Shahjalal University of Science and Technology, Sylhet 3114, Bangladesh

- CGPA: 3.64/4.00, Top 5 in class
  Undergraduate Thesis: A Transfer Learning Approach for Soil Strength Prediction
  Supervisor: Professor Dr. Shriful Islam

  Relevant Modules:
  Geotechnical Engineering I-III; Mechanics of Solids I and II; Structural Analysis I–III; Disaster Management and Earthquake Engineering; Statistics for Engineers; Differential Calculus and Vector Analysis; Numerical Analysis; Fluid Mechanics; Hydrology; Hydraulics and Hydraulic Structures; Scientific Research; Computer-Aided Structural Analysis and Design; Remote Sensing and GIS; Environmental Impact Assessment; Reinforced Concrete Design I–III;

RESEARCH & PUBLICATIONS

Journal Articles

1. **Nishat R.A.** & Joy M.R. (2025). Investigating the Trends of Rainfall and Discharge along the Brahmaputra-Jamuna River System. *Technical Journal of River Research Institute*, 17(1).
2. **Nishat R.A.** & Rahman F. Machine Learning in Soil Strength Prediction: A Review. Submitted to *Discover Civil Engineering (Springer)*. **(Under Review)**
3. Joy M.R. & **Nishat R.A.** Hydroclimatic Trend Analysis and Machine Learning-Based Water Level Prediction for the Ganges (Padma) River Basin. Submitted to *Water Resources Management.* **(Submitted)**
4. **Nishat R.A.,** Rahman F., Islam S. & Hoque, R. Instance-Based Transfer Learning for Cross-Regional Prediction of Undrained Shear Strength of Soils, Submitted to Geosystems and Geoenvironment *(Elsevier)*. **(Under Review)**

Conference Presentations

1. **Nishat R.A.**, Rahman F., Hoque N.M.R., Rafi M.N.I., & Islam S. (2025). Prediction of Soil Unconfined Compressive Strength with Decision Tree-Based Hybrid Machine Learning Model. Submitted to *ICCEI 2025 (RUET)*. **(Accepted)**
2. **Nishat R.A,** Tusar A.N., Islam S., Monni M.A. (2026). A Probabilistic Transformer-Based Machine Learning Model for Shallow Foundation Settlement Prediction. Submitted to *ICCESD 2026 (KUET)*. **(Accepted)**

Ongoing Projects

1. **Seismic Risk and Resilience Analysis of Chittagong** *(Manuscript in preparation)*
   Working with Ram Krishna Mazumder and Abul Hasnat to analyze structural and spatial vulnerability using GIS tools. Contributing to data visualization, interpretation, and manuscript development. Final write-up in progress.
2. **Mechanical Behavior of Lime and Fly Ash Stabilized Embankment Soil Reinforced with Polyester Fiber** *(Ongoing)*
   Conducting experimental research under Dr. Shriful Islam to evaluate the combined effect of admixtures. Leading data analysis and drafting research manuscript for journal submission.
3. **Stabilization of Kaolin Clay with Lime and Activated LRF Slag** *(Manuscript in preparation)*
   Engaged in planning, result interpretation and manuscript preparation under Dr. Shriful Islam.

Peer Reviews

1. Assessment Of Water Quality Parameters of Owala Dam,
   Journal: Asian Journal of Advanced Research and Reports
   Manuscript ID: Ms_AJARR_140860

Technical Skills

Civil Engineering & Data Analysis
- GIS & Remote Sensing (ArcGIS Pro, QGIS)
- Structural & Geotechnical Analysis (ETABS, AutoCAD)
- Hydrological Modeling (SWMM, EPANET)

Software & Programming
- Python (Scikit-Learn, Pandas, Matplotlib)
- MS Office (Word, Excel, PowerPoint)

Design & Media
- Graphic Design (Photoshop, Illustrator)
- Video Editing (Adobe Premiere Pro)
- Photography & Videography

Extra-curricular Activity

General Secretary | Aaj Muktomancho   **2024 – 2025**
- Lead the 15th Executive Committee, overseeing cultural, literary, and intellectual initiatives.
- Served as convenor for the concert titled 'Rondhre Onunaad2024' (1,000+ attendees), ensuring smooth execution.
- Oversaw event planning, public engagement, and partnerships to expand Aaj Muktomancho's reach and impact.

Organizing Secretary | Association of Civil and Environmental Engineering, SUST   **2021 – 2025**
- Overseeing the planning and execution of department-wide events.
- Managed and organized seminars, reception and general departmental events with 1000+ attendings.
- Managing student engagement initiatives, ensuring smooth coordination between faculty, students, and industry professionals.

Photographer (Freelance) | Sylhet, Bangladesh   **2023 - Present**
- Provided professional photography services for events, publications, and creative projects.
- Specialized in event coverage, product photography, and promotional content creation.
- Worked with clients to develop high-quality visual narratives tailored to their brand or event needs.

Honors and Achievements
- Semifinalist, Hult Prize at SUST, 2023
- Convenor, Rondhre Onunaad 2024, Kaaktaal's first concert at SUST

Certificates and Training
- **Introduction to GIS Mapping | Coursera**
  University of Toronto
  Grade Achieved: 95.53%
  Credential ID: ZLMCG05UAA19

References
- Dr. Shriful Islam
  Professor
  Department of Civil & Environmental Engineering
  Shahjalal University of Science and Technology Sylhet-3114, Bangladesh
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  Email: sharif-cee@sust.edu, sharif_sust_cee@yahoo.com

- Dr. Mohammad Shahidur Rahman
  Professor
  Head of the Department
  Department of Civil and Environmental Engineering
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