MOUMITA PAUL AISHI

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EDUCATION

Portland State University, Portland, Oregon, USA
M.S. in Civil Engineering (Geotechnical Engineering) | Expected 2028

Khulna University of Engineering and Technology (KUET), Khulna, Bangladesh
Bachelor of Science (B.Sc.) in Civil Engineering

RESEARCH INTERESTS

Cone Penetration Testing (CPT/CPTu), Geotechnical Site Investigation, Uncertainty Quantification, Soil Behavior, Numerical Modeling, Soil Improvement, and Sustainable Geotechnical Engineering.

RESEARCH EXPERIENCE

Graduate Research — CAREER Cone Penetration Testing and Site Investigation Project
Portland State University

- Investigating uncertainty in CPTu-based interpretation to support reliable subsurface characterization and geotechnical engineering decisions.

Undergraduate Thesis Research
"Effect of Inorganic Salt Solution and Plasticity Index on the Undrained Shear Strength of Soils"

Supervisor: Md. Humayun Kabir, Associate Professor, Civil Engineering, KUET

- Collected soil samples from multiple locations and measured fundamental geotechnical properties.
- Prepared soil samples with varying concentrations of inorganic salt solutions to investigate their effects on soil behavior.
- Conducted direct shear and vane shear tests to evaluate soil shear strength under the study conditions.
- Analyzed the effects of inorganic salt concentration and plasticity index on the undrained shear strength of soil samples.

PUBLICATION

Aishi, M. P., Mehedi, T., & Kabir, M. H. (2022). "Analyzing the Effect of Inorganic Salt Solution & Plasticity Index on Undrained Shear Strength of Soils in a Coastal City of Bangladesh." *International Conference on Civil Engineering for Sustainable Development (ICCESD 2022), Khulna, Bangladesh.*

SELECTED ACADEMIC PROJECTS

Numerical Modeling of Riverbank Soil — PLAXIS 2D

- Performed finite element analyses to investigate soil settlement, stability, and water flow in riverbank soil.

Drought Analysis and Mapping — DrinC and ArcGIS

- Investigated drought indices in western Bangladesh and used GIS tools to map drought-related patterns.

Rapid Sand Filter Model

- Constructed a rapid sand filter model using recycled waste materials.

Structural Design of a Ten-Story Building — ETABS and STAAD.Pro

- Performed structural design and analysis of a ten-story building.

TECHNICAL SKILLS

Geotechnical analysis: PLAXIS 2D
GIS and drought analysis: ArcGIS, DrinC
Programming and numerical analysis: MATLAB, Code::Blocks
Structural analysis and design: ETABS, STAAD.Pro
Computer-aided design: AutoCAD, AutoCAD 3D

ACADEMIC SERVICE

Conference Volunteer
International Conference on Civil Engineering for Sustainable Development (ICCESD), 2018