

# Md Ariful Hassan Mojumder

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## Summary

- Three years of experience in the design and construction supervision of deep and shallow foundations.
- Expertise in performing slope stability analyses and seepage analyses of embankments.
- Experience in settlement calculation of foundations and embankments.
- Design of earth retaining structures e.g., MSE wall.
- Experience in site inspection/supervision.
- Three years of experience in field and laboratory geotechnical investigation.
- Proficiency in technical documentation (engineering drawing, reports, proposal, bid documents, etc.).
- **Registered Engineer-in-Training (EIT) at EGBC and Permanent Resident of Canada.**

## Education

### MS (Geotechnical Engineering)

**Aug 2020**

Louisiana State University, Baton Rouge, USA

(CGPA: 4.00/4.00)

Thesis: Evaluation of Undrained shear strength of soil, ultimate pile capacity, and pile setup from the Cone Penetration Test (CPT) using Artificial Neural Network (ANN).

### BSc (Civil Engineering)

**July 2014**

Bangladesh University of Engineering and Technology, Dhaka

(CGPA: 3.62/ 4.00)

## Software Skills

GeoStudio (Seep/W, Slope/W, etc.), Settle 3D, LPILE, APILE, GRL WEAP, Auto-CAD, Civil 3D, Rocscience RS3, Slide, PLAXIS, DrivenPiles, MatLAB, SAS, Grapher, ETABS.

## Professional Experience

### Geotechnical Engineer

**Sep 2020 – Present**

HNTB Corporation, Milwaukee, WI, USA

- Design of Driven Pile for Highway Bridges: Axial capacity, Drivability, Neutral Plane Analysis, etc.
- Design of Drilled Shaft for permanent sign structures over US Interstate Highway, I-96.
- Design of MSE Retaining Walls for Highway Bridges.
- Settlement Analysis of embankments using Settle3 software package.
- Slope Stability Analysis of embankments using SLOPE/W software package.
- Processing field and laboratory test data e.g., SPT, consolidation test data, etc.
- Preparation of technical memo and writing reports.

### Assistant Engineer (Civil)

**May 2016 – Jun 2018**

Power Grid Company of Bangladesh Ltd. (PGCB), Dhaka, Bangladesh

- Geotechnical Design and construction quality assurance of drilled shafts.
- Slope Stability and Seepage analyses of the power substation lands beside the river.
- Conducting field and Laboratory tests of soil and reporting.
- Settlement calculation for shallow and deep foundations.
- Coordination among consultants (Japan), contractor (India), regulatory agencies (Bangladesh).
- Design and construction supervision of RCC buildings (6 storied) and retaining walls.
- Design and construction of the underground and overhead reservoir.
- Inspection of construction materials.
- Preparation of engineering drawings and monthly, quarterly, and annual reports.

### Assistant Civil Engineer

**May 2015 – Apr 2016**

KAJOS Enterprise, Dhaka, Bangladesh

- Construction supervision of residential RCC buildings (6 storied).
- Coordinating site exploration e.g. SPT tests.
- Design and construction quality assurance of foundations.
- Inspection of construction materials.
- Preparing detailed engineering drawings and reports.

## Lecturer

Aug 2014 – Apr 2015

*Department of Civil Engineering, Presidency University, Bangladesh*

- Lecture planning, preparation, and research.
- Syllabus preparation, test construction, grade assessment, and moderation.
- Academic advising of students.
- Lab preparation, and lab supervision.

## Research Experience

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### Graduate Project Work

Aug 2018 – May 2019

*Louisiana State University, Baton Rouge, USA*

- Three-Dimensional (3D) Slope Stability and Seepage Analysis (using *Rocscience RS3*, and *GeoStudio*) of IHNC Floodwall, New Orleans, Louisiana.
- Slope Stability and Settlement Analysis (using *GeoStudio* and *Settle-3D*) of West Bank and Vicinity of Mississippi River Levee Protection Project, Louisiana.

### Graduate Research Assistant

Aug 2018 – Aug 2020

*Louisiana Transportation Research Center (LTRC), Baton Rouge, USA*

- Collection of data e.g., soil borings, CPTs, etc.
- Conducting advanced lab tests e.g., Triaxial test, large direct shear test, SWCC, consolidation test, etc.
- Evaluation of undrained shear strength of soil from the Cone Penetration Test (CPT).
- Evaluation of Pile setup and Ultimate pile capacity from CPT and some other soil properties using ANN.
- Application of Cone Penetration Test (CPT) in the evaluation of different soil parameters.

## Affiliation

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- EIT at Engineers and Geoscientists BC (EGBC)
- EIT at Texas Board of Professional Engineers and Land Surveyors, USA
- Member of American Society of Civil Engineers (ASCE)
- Member of Deep Foundations Institute (DFI)

## Publications

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### Journal Articles:

- Abu-Farsakh, M.Y, and Mojumder, M.A.H. (2020). Exploring Artificial Neural Network for Evaluating the Undrained Shear Strength of Soil from the CPT Data. *Transportation Research Record*, 2020.
- Mojumder, M.A.H., and Abu-Farsakh, M.Y (2021). Evaluation of Ultimate Pile Capacity of Driven Piles from the Cone Penetration Test Data using Artificial Neural Network. *Journal of Computing in Civil Engineering* (under review), 2021.
- Mojumder, M.A.H., and Abu-Farsakh, M.Y (2021). Evaluation of Pile Set Up Parameters from the Cone Penetration Test Data using Artificial Neural Network. *Journal of Computing in Civil Engineering* (under review), 2021.

## References

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