

4 years' research experience in the field of environmental and geotechnical engineering resulted in 3 peer-reviewed journal articles and 4 full-length conference proceedings having a total citation of 13 and h-index of 2. I also have a 9 months' teaching experience (undergraduate engineering).

## Education

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2016- 2021 **BSc in Civil Engineering**  
*Bangladesh University of Engineering and Technology (BUET)*  
CGPA: **3.81**/4.00, Class Position: **8<sup>th</sup>** /195  
Major: **Environmental Engineering**, Minor: Geotechnical Engineering

## Research Experiences

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- 2021-Now **Review of Heavy Metal Pollution in Surface Water of Bangladesh**  
Supervisor: Dr Sheikh Mokhlesur Rahman, Asst Professor, Dept of Civil Engineering, BUET.
- Determining the Heavy Metal Pollution hotspots (*ArcGIS*)
- Impact of Traffic Volume on Air Quality during COVID-19 in Bangladesh**  
Supervisor: Dr. Md Asif Raihan, Asst Prof, Accident Research Institute, BUET.
- Analysis of traffic volume and air quality data (*MS Excel*)
- 2019-21 **Thesis: Effectiveness of Zinc and Phosphate as Scale Inhibitor for CaCO<sub>3</sub> Precipitation**  
Supervisor: Dr Muhammad Ashraf Ali, Professor, Dept of Civil Engineering, BUET.
- Batch experiments to determine the comparative effectiveness and optimum mixing time for different scale inhibitors.
- 2020-21 **Accimap Development for Landslide Hazard Analysis in Bangladesh**  
Supervisor: Mr. Omar Faruque Hamim, Asst Prof, Dept of Civil Engineering, BUET.
- Landslide data collection and analysis using *MS Visio and MS Excel*.
- Estimating Shear Strength of Soil Using Machine Learning Techniques**  
Supervisor: Dr Md Kabirul Islam, Professor, Dept of Civil Engineering, BUET
- Gaussian Process and Support Vector Machine modeling (*MATLAB and Python*).
- Prediction of Particulate Matter in Air using Machine Learning Models**  
  - Random Forest, Gaussian Process & Support Vector Machine modeling (*MATLAB*)
- 2017-20 **Infiltration in Vegetated Soil**  
Supervisor: Dr Mohammad Shariful Islam, Professor, Dept of Civil Engineering, BUET.
- Developed infiltration models for vegetated soil (*MATLAB cftool*)
  - Developed ANN models for soil infiltration rates (*MATLAB*)
  - Calibration and Testing of a novel Portable Rainfall Simulator

## List of Publications

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### Journal Articles:

1. Hossain, A., **Alam, T.**, Barua, S., & Rahman, M.R. (2021). Estimation of shear strength parameter of soil from SPT-N<sub>60</sub> using machine learning models. *Geomechanics and Geoengineering*. Doi: 10.1080/17486025.2021.1975048
2. Chowdhury, M. E., Islam, M. S., **Alam, T.**, Barua, S., Shahriar, M. S., & Anisa, H. (2020). Infiltration in vegetated soil: Empirical modeling and sensitivity analysis. *Modeling Earth Systems and Environment*. doi:10.1007/s40808-020-00867-x
3. Chowdhury, M. E., Islam, M. S., Islam, M. A., Shahriar, M. S., & **Alam, T.** (2018). Development and Calibration of a Portable Artificial Rainfall Simulator for Reproducible Experiments on Soil Erosion. *Global Science and Technology Journal*, 6(2), 47–63.

## Conference Papers and Abstracts:

1. **Alam, T.**, Tabassum, N., Shahriyar, A., Dipto, S.B., Yousuf, I.B., Islam, N., & Rahman, S.M. (2021). "Heavy Metal Pollution in Surface Water of Bangladesh: A Critical Review". Book of Abstracts. International Conference on Water and Flood Management 2021, Dhaka. [Presented]
2. Barua, S., **Alam, T.**, & Mahmud, M. (2021). "Estimating Particulate Matter using Statistical Modeling Methods: case study - Chattogram, Bangladesh." Proceedings of 5<sup>th</sup> International Conference on Advances in Civil Engineering 2020, Chattogram. [Presented]
3. Rashid, I., **Alam, T.**, Ahmed, T., & Ali, M.A. (2021). "Evaluation of the effectiveness of zinc as scale inhibitor in delaying precipitation of CaCO<sub>3</sub> in water treatment and distribution systems." Proceedings of 5<sup>th</sup> International Conference on Advances in Civil Engineering 2020, Chattogram.
4. **Alam, T.**, Barua, S., Anisa, H., & Islam, M. S. (2019) "Evaluation of Infiltration Rate from Soil Properties Using Artificial Neural Network." Proceedings of International Conference on Disaster Risk Management 2019, Dhaka. Pp 144-147. [Presented]
5. Chowdhury, M.E., Islam, M.A., Islam, M.S., Shahriar, & M.S., **Alam, T.** (2017) "Design, Operation and Performance Evaluation of a Portable Perforated Steel Tray Rainfall Simulator." Proceedings of 14<sup>th</sup> Global Engineering and Technology Conference, Dhaka. [Presented & Received Best Paper Award]

## Professional Experiences

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July,2021- Now	<b>Lecturer</b> <i>Civil and Environmental Engineering (CEE), Islamic University of Technology</i> Courses: Numerical Analysis and Computer Programming, Application of Computer Programming
April,2021- June,2021	<b>Lecturer</b> <i>Department of Civil Engineering, Stamford University Bangladesh</i> Courses: Environmental Engineering Laboratory, Open Channel Flow Sessional etc.
2018-19	<b>Translator</b> <i>STARS (Socio-technical Approach to Road Safety) project</i> Translated video recordings of drivers and passengers from Bangla to English.

## Academic Achievements

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2018	Dean's List for CGPA $\geq$ 3.75 in a level (Level 3)
2016-20	University Merit Scholarship (Level 3-4) and University Stipend (Level 1-2)
2015	Board Scholarship (General) for Higher Secondary Certificate Exam

## Extracurricular Accolades

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2020	<i>Winner, Honda Foundation Young Engineer and Scientist's Award 2019</i>
2015	<i>8<sup>th</sup> Position, 10<sup>th</sup> Bangladesh Astro-Olympiad</i>
2014	<i>Champion, National Earth Olympiad</i>

## Team Work Experience

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2019-21	General Secretary, BUET Brainiacs
2017	General Secretary, Viqarunnisa Noon Earth Club, Vice President, Viqarunnisa English Language Club

## Software Skills

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MATLAB, Python, AutoCAD , MS PowerPoint, MS Visio , SAP 2000, ArcGIS

## Language Proficiency

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GRE: 332 (Quant 168, Verbal 164 and AWA 3.5)

TOEFL: 113 (Reading 29, Listening 29, Speaking 27 and Writing 28)