

# SISHIR ROY

Graduated – Civil Engineering

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 [Sishir Roy](#)



## Education

**2025-Present:** **Doctor of Philosophy**, Civil Engineering  
*University of Houston*  
Advised by: **Dr. Mostafa Momen**

**2017-2022:** **Bachelor of Science**, Civil Engineering  
*Bangladesh University of Engineering and Technology*  
**Major:** Environmental Engineering; **CGPA:** 3.42/4.00.



## Academics

**Thesis 2022:** *Quantifying High Resolution Intra-Urban Spatial Variability of Fine Particulate Matter across Dhaka City.*

Supervised by: **Dr. Provat Kumar Saha**, Associate Professor, BUET

Using a low-cost PurpleAir sensor, I measured PM<sub>1</sub>, PM<sub>2.5</sub>, and PM<sub>10</sub> concentrations across different parts of Dhaka during the dry season to identify pollution hotspots and model spatial variations of fine particulate matter. I assessed PM<sub>2.5</sub> levels in various land-use settings, quantified spatial variability, and compared the obtained PM<sub>2.5</sub> data with continuous monitoring sites.

**Project 2022:** *Design of Water Supply, Sanitation & Sewerage Systems for Textile Industrial Village.*

For a 500-acre 'Textile Industrial Village,' we conducted layout planning, population and water demand calculations, water source development, pump design, water supply distribution, sanitary sewer, and building plumbing system.



## Research Interests

- ❖ Air Quality
- ❖ Environmental Fluid Dynamics
- ❖ Hurricane Boundary Layer
- ❖ Weather Forecasting



## Standardized Test Scores

**GRE:** 315/340 (Quantitative Reasoning: 168; Verbal Reasoning: 147; Analytical Writing: 3.0)

**IELTS:** 6.5/9.0 (Listening: 7.5; Reading: 7.0; Writing: 6.0; Speaking: 6.0)



## Work Experience

**January 2025 – Present:** **Graduate Research Assistant** at *University of Houston*.

- Works at [Engineering Fluid Mechanics](#) Lab
- Supervised by: **Dr. Mostafa Momen**

**November 2022 – February 2024: Executive--Content Developer** at *Softeko, Bangladesh.*

- Resolved complex challenges in both Python and VBA, including data cleaning, data wrangling, time series analysis, automated spam filtering, and task scheduling.
- Published nearly 150 technical articles on ExcelDemy via WordPress.
- Developed custom templates using VBA and intricate formulas.
- Designed a VBA-based data entry form for streamlined data management.
- Used Python to develop PDF editing, PDF conversion, and file size compression tools.
- Led two Microsoft Visual Basic software customization projects.

**May 2024 – Present: Research Assistant** (Air Quality Research) at *BUET, Dhaka, Bangladesh.*

- Collaborating with **Dr. Provat Kumar Saha** on an NSF-funded project and conducting air quality measurements with PurpleAir sensors at 20 different locations for over 1 year.
  - Cleaned data by replacing non-numeric characters and outliers with None values.
  - Checked consistency between two channels of PurpleAir sensors and compared them with continuous monitoring sites (CAMS Site) to ensure no faulty channel.
  - Calculated and visualized PM<sub>2.5</sub> trends on an hourly, daily, and monthly basis to demonstrate the spatial and temporal variability across various land-use settings.



## Awards

- Awarded **Scholarship** for Excellence in **Higher Secondary Certificate (HSC)** Examination, **2016**, *Board of Intermediate and Secondary Education, Cumilla.*



## Extracurricular Activities

- Finalist in **CE Case Competition - Eccentric: Civil Engineering Festival 2018**
- Regional Champion in **Bangladesh Mathematical Olympiad 2013**



## Certifications and Training

- **3D CAD Fundamental** - *National Taiwan University*
- **3D CAD Application** - *National Taiwan University*
- **Introduction to Data Analysis Using Excel** - *Rice University*
- **Presentation skills: Designing Presentation Slides** - *National Research Tomsk State University*



## Technical Skills

- **Programming Languages:** C++, Visual Basic, Python
- **Computer-Aided Design & Drafting Software:** AutoCAD, SketchUp
- **Simulation Software:** ETABS, CSi SAP2000, MATLAB, WRF, WRF-Chem
- **Microsoft Office Suite:** Word, Excel, PowerPoint, Teams, OneNote
- **Language Proficiency:** Bengali (Native), English (Fluent), Hindi (Basic)



## References

**Dr. Provat Kumar Saha**

Associate Professor

Department of Civil Engineering, BUET

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**Dr. Md. Ferdous Alam**

Associate Professor

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