Mohammad Abid Hasan

3132 4TH ST, APT 208, Lubbock, Texas, 79415
Email: has24395@ttu.edu | Phone: (512) 667 3468
Website: Abid Hasan

Education

Texas Tech University, Lubbock, Texas
Master of Science in **Atmospheric Science** (Expected Graduation Dec 2026)
Relevant Coursework: Radar Meteorology, Geophysical Fluid Dynamics, Wind Science and Modeling
Texas State University, San Marcos, TX
Master of Science in **Civil Engineering** (Sep 2024 – Dec 2024)
Relevant Coursework: Advanced Reinforced Concrete, Advanced Infrastructure Materials, Statistics
Bangladesh University of Engineering and Technology, Dhaka, Bangladesh
Bachelor of Science in **Civil Engineering**, 2018 – 2023
CGPA: 3.52/4.0 (4.0/4.0 in undergraduate thesis)
Relevant Coursework: Structural Dynamics, Steel-Concrete Composite, Solid Mechanics.

Publications

-Oral presentation at the 2026 AMS Annual Meeting, Houston, TX, on **"Generating tornado-like vortices (TLVs) in straight-line simulators using moving louvers with LES."**

Research Experience

Graduate Research Assistant
Department of Geoscience, Texas Tech University (Jan 2025 – Present)
- Advancing vortex generation in straight line wind tunnels using LES
- Interaction of transient winds with sub-urban neighborhoods using LES informed by field data

Graduate Research Assistant
Ingram School of Engineering, Texas State University (Sep 2024 – Dec 2024)
- Developing an Artificial Neural Network (ANN) model for structural health monitoring using intrinsic self-sensing concrete data.
- Simulating and validating concrete behavior for smart infrastructure applications.

Undergraduate Research Thesis
BUET, Dhaka, Bangladesh (2018 – 2023)
- Developed a damage detection model using finite element method (FEM), time series analysis, and ARIMA modeling.
- Successfully identified damage locations and severity in a simulated bridge models.
- Skills: Finite Element Modeling, ARIMA, statistical analysis, structural health monitoring.

Research Interests

-Wind engineering, computational wind engineering (CWE)
-Application of Machine learning and deep learning algorithms on structural analysis.

-Structural health monitoring, non-destructive evaluation, and smart infrastructure systems.

Project Experience

Real-Time Structural Health Monitoring for Kyle Fire Station (Apr 2023 – Nov 2024)

- Implemented a self-sensing concrete system with vibrating wire strain gauges.
- Analyzed real-time data for infrastructure performance using Loggernet.

Development of a Swimming Pool Complex, BUET (May 2022 – May 2023)

- Designed and analyzed an Olympic-sized pool using ETABS, AutoCAD, and SketchUp.
- Conducted feasibility analysis considering environmental, geological, and economic factors.
- Estimated costs and prepared a comprehensive Bill of Quantity (BOQ).

Field Deployment

Obtaining "full-scale" pressure, velocity, and loading data from the field at high spatial and temporal resolution for ABL and Vortex-based flow systems (29th June – 3rd July 2025)

- Deployed TTU StickNets to gather wind speed, direction at high spatial resolution.
- Gather 'full scale' high spatial and temporal resolution wind velocity, pressure data around an instrumented cube.

TxDOT 0-7206: Develop Optimum 2-Mat Reinforcement Design in CRCP

- Conducted finite element simulations to optimize CRCP designs using ANSYS.
- Coordinated field data collection and analyzed structural performance using Loggernet software.
- Hardware: Datalogger, vibrating wire strain gauges.

Professional Experience

Lecturer

Department of Civil Engineering, Dhaka International University (Aug 2023 – Jul 2024)

- Taught civil engineering courses, supervised student projects, and guided thesis research.
- Developed course materials focused on structural engineering.

Skills

- Programming: OpenFOAM, MATLAB, Python, R
- Software: ANSYS, ABAQUS, ETABS, SAP, SketchUp, AutoCAD
- Hardware: Datalogger (CR1000X), Arduino Mega, vibrating wire strain gauges, steel strain gauges
- Machine Learning: Proficient in statistical modeling, machine learning, and neural network
- Communication: Effective verbal and written communication, experience in teaching and mentoring

Certifications

Python and Machine Learning Courses – KAGGLE, Coursera
Machine Learning with Python – Free Code Camp (Ongoing)

Professional Memberships

ITE TXST: Actively promoting Institute activities at Texas State University.
ASCE TXST Student Chapter: Member since Oct 2024, participating in seminars and projects.
ACI TXST Student Chapter: Active participant in professional activities.
ACI BUET Student Chapter: Member since Oct 2021, participating in seminars, conferences, and various voluntary activities.

Volunteering

Assisted in organizing the 5th Annual Paper Meet & Civil Engineering Congress 2022, CEISMIC Civil Engineering Fest.

Achievements

Texas State Graduate Merit Fellowship
Talent Pool Scholarship (awarded by Education Board Bangladesh, three times)

Test Scores

GRE: Verbal: 152, Quantitative: 165, Analytical Writing: 3.0
TOEFL: Total: 103 (Reading: 25, Listening: 28, Speaking: 25, Writing: 25)

References

Dr. Faiaz Khaled
Assistant Professor, Department of Geoscience, Texas Tech University
Email: faiaz.khaled@ttu.edu
Dr. Johannes Dahl
Associate Professor, Department of Geoscience, Texas Tech University
Email: johannes.dahl@ttu.edu
Dr. Shohel Rana
Professor, Department of Civil Engineering, BUET
Email: shohel@ce.buet.ac.bd