MD. TANZIM HOSSAIN

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CORE COMPETENCIES

- Bangladeshi Native; fluent in English
- Proficient in C, C++, Python, Java, MATLAB, COMSOL, LaTeX, MSWord, Excel, and PowerPoint; familiar with Git, Android Studio
- Gained professional experience in proposal and report writing, research, study design, data collection and analysis, and documentation through the study with NSU and BANBEIS project
- Created and maintained a welcoming, friendly, engaging, and nurturing classroom environment where all students felt comfortable as Lab Instructor of the ECE Department at North South University and as Lecturer of the ECE Department at Presidency University
- Compassionate and results-oriented teacher with more than 2 years of experience managing medium and large-sized classrooms.
- Experienced living and studying within a diverse multicultural environment consisting of nationals from twenty countries for 7 years

EDUCATION

B.Sc. in CSE, Minor in Mathematics, 2021 — **North South University (NSU)**, Dhaka, Bangladesh — CGPA: ☻/4.00

AWARDS & ACHIEVEMENTS

75% tuition fee waiver, Merit-based — **North South University (NSU)**, Dhaka, Bangladesh — 2017-2020

PROJECTS & RESEARCH

Research Assistant — **Bangladesh Ministry of Education (BANBEIS)**, Dhaka, Bangladesh
July 2020 – April 2021
Project: Developing Mathematical Algorithms and Software for the Model Reduction of Large-Scale Dynamical Systems.
Duties:

- Generating data using COMSOL Multiphysics® Version 5.5
- Keep documentation

Research Assistant — **NSU Conference & Travel Grant Committee (CTRGC)**, Dhaka, Bangladesh
January 2020 – December 2020
Project: Model Reduction of Second-Order Descriptor Systems over Finite-Frequency Interval
Duties:

- Review the literature and investigate the new approaches to find the framework for the underlying problem
- Develop an algorithm for the proposed method
- Produce computer-oriented simulations for developed algorithms
- Apply the algorithm to some real-world applications

Research Assistant — **NSU Conference & Travel Grant Committee (CTRGC)**, Dhaka, Bangladesh
January 2021 – December 2021
Project: Approximation of Large-Scale Dynamical System over a Limited Time Interval
Duties:

- Generate real-life dynamical system using COMSOL Multiphysics® Version 5.5
- Generate state-space data
- Apply the Model Order Reduction technique over a Limited Time Interval for the generated state-space data

Research Assistant — **NSU Conference & Travel Grant Committee (CTRGC)**, Dhaka, Bangladesh
April 2022 – March 2023
Project: Model Order Reduction for Aircraft Wing Shape Optimization
Duties:

- Review the literature and investigate the new approaches to find the framework for data-driven airfoil design
- Optimize the generated airfoil using Model Order Reduction Technique

PUBLICATIONS

- Islam, M., Uddin, M., Uddin, M. M., Khan, M., Hakim, A., **Hossain, M. T.** et al. (2022). *Sparsity-preserving two-sided iterative algorithm for riccati-based boundary feedback stabilization of the incompressible navier–stokes flow.* Mathematical Problems in Engineering, 2022

- Du, X., Iqbal, K. I. B., Uddin, M. M., **Hossain, M. T.**, & Shuzan, M. N. I. (2023). *A computationally effective time-restricted stability preserving H_2-optimal model order reduction approach*. Results in Control and Optimization, 100217.

- Du, X., Uddin, M., Fony, A., **Hossain, M. T.**, Sahadat-Hossain, M. et al. (2021). *Frequency limited H_2 optimal model reduction of large-scale sparse dynamical systems.* arXiv preprint arXiv:2101.04566

- Du, X., Iqbal, K. I. B., Uddin, M. M., Fony, A. M., **Hossain, M. T.,** Ahmad, M. I., & Hossain, M. S. (2021). *Computational techniques for H_2 optimal frequency-limited model order reduction of large-scale sparse linear systems.* Journal of Computational Science, 55, 101473

- Du, X., Uddin, M. M., Fony, A. M., **Hossain, M. T.**, Shuzan, M., Islam, N. et al. (2021). *Iterative rational krylov algorithms for model reduction of a class of constrained structural dynamic system with engineering applications.* arXiv preprint arXiv:2101.03053

- Uddin, M., Uddin, M. M., Khan, M. H., & **Hossain, M. T.** (2021). *Svd-krylov based sparsity-preserving techniques for riccati-based feedback stabilization of unstable power system models.* Journal of Engineering Advancements, 2(03), 125–131

- Haque, A., **Hossain, M. T.**, Murshed, M. N., Iqbal, K. I. B., & Monir, U. M. (2022). *Estimating aerodynamic data via supervised learning.* In 2022 25th international conference on computer and information technology (iccit). IEEE.

PROFESSIONAL EXPERIENCE

Lecturer	**Presidency University,** Dhaka, Bangladesh ECE Department**,** January 2022 – April 2022 & September 2022 – December 2022 Duties: ❖ Conduct the course according to the schedule drawn up by Presidency University ❖ Administer tests, assignments, and exams to the student enrolled and submit results by the date mentioned in the academic calendar
Lab Instructor	**North South University (NSU)**, Dhaka, Bangladesh ECE Department**,** May 2021 – Present Duties: ❖ Deliver lectures relevant to the lab session in the assigned laboratory room ❖ Prepare Lab Manuals for the respective lab sessions ❖ Attend 2 hours and 10 minutes for a Lab session /section/week ❖ Evaluate student performance in the lab sessions ❖ Conduct lab quizzes and other lab-related exams ❖ Evaluate lab reports and grade lab exam papers
Under Graduate Assistant (UGA)	**North South University (NSU)**, Dhaka, Bangladesh Department of Mathematica & Physics**,** January 2019 – April 2022 Duties: ❖ Employ Four (04) hours per section per week, of which Two (02) hours must be used for consultation services to the students ❖ Garde home-works and assignments for each section ❖ Assist faculty members by proctoring during exams ❖ Assist faculty members in any other course related work

CONFERENCE PARTICIPATION

25th International Conference on Computer and Information Technology 2022,
Long Beach Hotel, Cox's Bazar, Bangladesh
Presented and submitted paper on "**Estimating aerodynamic data via supervised learning**"