

Mominul Islam

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🎓 [Google Scholar](#)

🔑 [ORCID](#)

🐙 [GitHub](#)

🌐 [LinkedIn](#)

Education

BSc **North South University**, Computer Science and Engineering Jan. 2019 – Jun. 2023
▪ CGPA: 3.86/4.00 (\approx Top 4%)

Teaching Experience

Lecturer **Primeasia University** Oct. 2024 – Present
Dept. of Computer Science and Engineering (Full-time)
Courses Taught:
▪ CSE485 / CSE486: Internet and Web Technology (Theory & Lab)
▪ CSE101 / PHN102: Introduction to Computer
▪ CIS201: Computer Applications

Lab Instructor **North South University** Oct. 2024 – Present
Dept. of Electrical and Computer Engineering (Part-time)
Courses Taught:
▪ CSE225L: Data Structures and Algorithms (Lab)

Teaching Assistant (GA / UGA) **North South University** Feb. 2022 – Jun. 2024
Dept. of Electrical and Computer Engineering 2 years 4 months
Graduate Assistant (GA) — (Jul. 2023 – Jun. 2024)
Undergraduate Assistant (UGA) — (Feb. 2022 – Jun. 2023)
Courses Assisted:
▪ CSE332: Computer Organization and Architecture
▪ CSE325: Concepts of Programming Language

Industry Experience

Intern **Beximco Communications Limited** Mar. 2024 – Jun. 2024
Dept. of Business Systems 3 months
Key Responsibilities:
▪ ERP data verification and migration using Python.
▪ UI testing for web applications with test cases.
▪ Maintained project tracker for monitoring development of ongoing projects.

Publications

Mominul Islam, Hasib Zunair, Nabeel Mohammed, "CosSIF: Cosine similarity-based image filtering to overcome low inter-class variation in synthetic medical image datasets," *Computers in Biology and Medicine (CIBM)*, 2024

Paper: doi.org/10.1016/j.compbiomed.2024.108317 — Code: [GitHub](#) — [Q1, IF: 7.0]

Research Interests

- Computer Vision (Image Quality Assurance, Segmentation, Pose Estimation, Generative Models)
- Natural Language Processing (LLM Context Preservation, Q&A, XAI, Ethical AI)
- Quantum Machine Learning (Classical to Quantum Knowledge Transfer, Hybrid QML)

Research in Progress

CV — Frame Distillation Algorithm for Reducing Manual Annotation in Video Datasets

NLP — Context-Aware Semantic Chunking Algorithm for Retrieval-Augmented Generation

QML — Alzheimer's Disease Detection from 3D MRI Images with Classical-Quantum Neural Networks

Projects

Cattle Pose Estimation Using a Semi-Annotated High-Resolution Image Dataset Jun. 2024

- Code: [Kaggle](#)
- Model: HRNet-32

Context-to-Question Generation Using Transformer Models Jan. 2024

- Code: [Kaggle](#)
- Models: BERT, T5 — [Hugging Face](#)

Bengali Text Summarization Using a Multilingual Encoder-Decoder Model Jun. 2023

- Code: [GitHub](#)
- Model: mT5

Skin Lesion Classification Using Cross-Stage CNNs and Transformers Sep. 2022

- Ref. Code: [GitHub](#) BSc Thesis (Part 2/2)
- Models: ConvNeXt, Swin-Transformer, ViT

Image-to-Image Translation with GAN to Address Class Imbalance Aug. 2022

- Ref. Code: [GitHub](#) BSc Thesis (Part-1/2)
- Model: StyleGAN2-ADA

Heart Disease Detection Using Machine Learning Jul. 2022

- Code: [GitHub](#)
- Algorithms: Logistic Regression, Random Forest, Decision Tree, KNN, Naive Bayes

Courses

Quantum Computing, Information and Communication Jan. 2024 – Present

- Supervisor: Dr. Mahdy Rahman Chowdhury
- Status: Part-A : Completed (Marks: 80%+) — Part-B : Ongoing

Academic Archive

Computer Science CSE173 Discrete Mathematics — [Notes](#)

CSE231 Digital Logic Design — [Notes](#)

CSE332 Computer Organization and Architecture — [Notes](#)

CSE465 Pattern Recognition and Neural Network — [Notes](#)

Mathematics MAT116 Pre-Calculus — Notes — [I](#) — [II](#)

MAT125 Introduction to Linear Algebra — Notes — [I](#) — [II](#)

MAT120 Calculus and Analytical Geometry I — Notes — [I](#) — [II](#) — [III](#)

MAT130 Calculus and Analytical Geometry II — Notes — [I](#) — [II](#) — [III](#)

MAT250 Calculus and Analytical Geometry IV — Notes — [I](#) — [II](#)

MAT350 Engineering Mathematics — Notes — [I](#) — [II](#) — [III](#)

MAT361 Probability and Statistics — [Notes](#)

Skills

Programming Languages: C/C++, Python, Java

ML Frameworks: PyTorch, TensorFlow, OpenMMLab, Qiskit

Web: HTML, CSS, JavaScript, SQL

Simulation Software: Logisim, Proteus

Typesetting: L^AT_EX

OS: Linux, Windows

Languages

Bengali: Native

English: Proficient

IELTS, Overall: 7.0

Oct, 2023

Speaking: 7.5	Reading: 7.5	Writing: 7	Listening: 6.5
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Honors and Awards

Bachelor's Degree Honors:

– *Summa Cum Laude (Highest Distinction)*

Merit Scholarships During Bachelor's Studies:

– *50% Tuition Waiver (Summer 2022 - Fall 2022)*

– *25% Tuition Waiver (Spring 2020 - Spring 2022)*

References

Dr. Nabeel Mohammed

Associate Professor

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North South University

Dhaka, Bangladesh

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