

Mominul Islam

☎ (+880) 179 594 8308

✉ mominul.islam05@northsouth.edu

🌐 mominul-ssv.github.io

🔗 [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 2%)	
	▪ Distinction: Summa Cum Laude	
	▪ Merit Scholarships: Spring 2020 – Fall 2022	

Teaching Experience

Lecturer	Primeasia University Dept. of Computer Science and Engineering Courses Taught: ▪ Internet and Web Technologies (Theory & Lab)	Oct. 2024 – Present (Full-time)
Lab Instructor	North South University Dept. of Electrical and Computer Engineering Courses Taught: ▪ Structured Programming Language & Data Structures and Algorithms (Lab)	Jul. 2024 – Present (Part-time)
Teaching Assistant (GA / UGA)	North South University Dept. of Electrical and Computer Engineering Graduate Assistant (GA) — (Jul. 2023 – Jun. 2024) Undergraduate Assistant (UGA) — (Feb. 2022 – Jun. 2023) Courses Assisted: ▪ Computer Organization and Architecture & Concepts of Programming Language	Feb. 2022 – Jun. 2024 2 years 4 months

Industry Experience

Intern	Beximco Communications Limited Dept. of Business Systems 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.	Mar. 2024 – Jun. 2024 3 months
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Publications

- M. Islam, H. Zunair, N. 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](#)] [[Code](#)] [Q1, IF: 7.0]
- M. Islam, M.J. Hasan, M.R.C. Mahdy, "CQ-CNN: A hybrid classical-quantum convolutional neural network for Alzheimer's disease detection using diffusion-generated and U-Net segmented 3D MRI," *arXiv*, 2025 [[Paper](#)] [[Code](#)]

Research in Progress

- CV — Frame Distillation Algorithm for Reducing Manual Annotation in Video Datasets
- NLP — Context-Aware Semantic Chunking Algorithm for Clinical RAG-Based Q&A Systems

Research Interests

- Computer Vision (*Generative Models, Image Quality Assurance, 3D Imaging*)
- Natural Language Processing (*LLM Context Preservation, Lossless RAG*)
- Quantum Computing (*Quantum Machine Learning, Hybrid Neural Networks*)

Projects

CV — Cattle Pose Estimation Using a Semi-Annotated High-Resolution Image Dataset [Code]	Jun. 2024
NLP — Context-to-Question Generation Using Transformer Models [Code] [Model]	Jan. 2024
NLP — Bengali Text Summarization Using a Multilingual Encoder-Decoder Model [Code]	Jun. 2023
CV — Skin Lesion Classification Using Cross-Stage CNNs and Transformers [Code]	Sep. 2022
CV — Image-to-Image Translation with GAN to Address Class Imbalance [Code]	Aug. 2022

Certificates

Quantum Information, Quantum Computing and Quantum Machine Learning	Jan. 2024 – Jun. 2024
▪ <i>Supervisor:</i> Dr. Mahdy Rahman Chowdhury	
▪ <i>Recommendation / Certification:</i> [PDF]	

Academic Archive

Introduction to Linear Algebra [α] [β]	Probability and Statistics [PDF]
Calculus and Analytical Geometry I [α] [β] [γ]	Discrete Mathematics [PDF]
Calculus and Analytical Geometry II [α] [β] [γ]	Digital Logic Design [PDF]
Calculus and Analytical Geometry IV [α] [β]	Computer Organization and Architecture [PDF]
Engineering Mathematics [α] [β] [γ]	Pattern Recognition and Neural Network [PDF]

Number of Scanned Pages: 2,698 (Mathematics: 2,141, Computer Science: 557))

Skills

Programming Languages: C/C++, Python
ML Frameworks: PyTorch, TensorFlow, OpenMMLab, Qiskit
Web: HTML, CSS, JavaScript, SQL
Simulation Software: Logisim, Proteus
Typesetting: \LaTeX

Languages

Bengali: Native
English: Proficient

References

[Dr. Nabeel Mohammed](#)

Associate Professor
Dept. of Electrical and Computer Engineering
North South University
Dhaka, Bangladesh
Email: nabeel.mohammed@northsouth.edu
Contact Number: (+880) 172 050 5591

[Dr. Mohammad Shafiul Alam](#)

Professor
Dept. of Electrical and Electronic Engineering
Dhaka University
Dhaka, Bangladesh
Email: alam.shafiul@northsouth.edu
Contact Number: (+880) 172 684 9575