

# Mominul Islam

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🌐 [mominul-ssv.github.io](https://mominul-ssv.github.io)

🎓 [Google Scholar](#)

ORCID

🐙 [GitHub](#)

🌐 [LinkedIn](#)

## Education

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**BSc** North South University, Computer Science and Engineering

Jan. 2019 – Jun. 2023

- CGPA: 3.86/4.00 ( $\approx$ Top 4%)

## Teaching Experience

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**Lecturer**, Primeasia University

Oct. 2024 – Present

Dept. of Computer Science and Engineering

- CSE335: *Data Communication*
- CSE485: *Internet and Web Technology*

**Lab Instructor**, North South University

Jul. 2024 – Present

Dept. of Electrical and Computer Engineering

- 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)

- CSE332: *Computer Organization and Architecture*
- CSE325: *Concepts of Programming Language*

## Work Experience

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**Intern**, Beximco Communications Limited

Mar. 2024 – Jun. 2024

Dept. of Business Systems

3 months

- ERP Data Verification and Migration Using Python

## Publications

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**CosSIF: Cosine similarity-based image filtering to overcome low inter-class variation in synthetic medical image datasets**, \*[Mominul Islam](#), Hasib Zunair, Nabeel Mohammed, *Computers in Biology and Medicine* [Q1, IF: 7.0] Mar. 2024

Paper: [doi.org/10.1016/j.combiomed.2024.108317](https://doi.org/10.1016/j.combiomed.2024.108317) — Code: [GitHub](#)

## Research Interests

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- 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

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QML — Generative Models in Quantum Neural Networks for Alzheimer's Disease Detection

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

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

## Projects

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### Deep Learning — NLP

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

### Deep Learning — Computer Vision

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

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

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

### Machine Learning

Heart Disease Detection Using Machine Learning Jul. 2022

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

## Courses

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Quantum Computing, Information and Communication

Platform: [Mahdy Research Academy](#)

## Academic Archive

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### 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

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

**ML Frameworks:** PyTorch, TensorFlow, OpenMMLab

**Web:** HTML, CSS, JavaScript, SQL

**Simulation Software:** Logisim, Proteus

**Typesetting:** L<sup>A</sup>T<sub>E</sub>X

**OS:** Linux, Windows

## Languages

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**Bengali:** Native

**English:** Proficient

**IELTS, Overall:** 7.0

Oct, 2023

<b>Speaking:</b> 7.5	<b>Reading:</b> 7.5	<b>Writing:</b> 7	<b>Listening:</b> 6.5
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## Honors and Awards

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**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

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**Dr. Nabeel Mohammed**

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Dept. of Electrical and Computer Engineering

North South University

Dhaka, Bangladesh

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