

Mominul Islam

Website: mominul-ssv.github.io

Email: mominul.ivi@gmail.com

Mobile : +880 179 594 8308

EDUCATION

- **North South University** Jan. 2019 – Jun. 2023
Bachelor of Science (B.Sc.), Computer Science and Engineering; CGPA: 3.86/4.00
Distinction: Summa Cum Laude
Dhaka, Bangladesh

WORK EXPERIENCE

- **Research Assistant** Oct. 2023 – Present
Department of Electrical and Computer Engineering, North South University
Supervisor: Dr. Mohammad Ashrafuzzaman Khan
Dhaka, Bangladesh
- **Graduate Teaching Assistant** Jul. 2023 – Present
Department of Electrical and Computer Engineering, North South University
Course: Concepts of Programming Language (CSE425)
Dhaka, Bangladesh
- **Undergraduate Teaching Assistant** Feb. 2022 – Jun. 2023
Department of Electrical and Computer Engineering, North South University
Course: Computer Organization and Architecture (CSE332)
Dhaka, Bangladesh
Responsibilities:
 - Grading homework assignments and maintaining office hours for student consultations.
 - Conducting tutorial sessions for students requiring extra help outside of class hours.
 - Maintaining 4 hours per week per section, divided among assisting faculty members.

RESEARCH INTEREST & EXPERTISE

Interest: Artificial Intelligence, Machine Learning, Computer Vision, Natural Language Processing (NLP)

Expertise: Classification, Regression, CNNs, GANs, Vision Transformers, LLMs (Encoder-Decoder Models)

ONGOING RESEARCH

- [1] **Reinforcement learning from human feedback for healthcare domain adaptation**
Supervisor: Dr. Mohammad Ashrafuzzaman Khan

PUBLICATIONS

- [1] **CosSIF: Cosine similarity-based image filtering to overcome low inter-class variation in synthetic medical image datasets**, Mominul Islam*, Hasib Zunair, Nabeel Mohammed, in *Computers in Biology and Medicine, Elsevier 2023*. [Q1] [IF: 7.7] [PDF] [Code] [Under Review]
This research also serves as my bachelor's thesis

NOTABLE PROJECTS

- Fine-Tuning mT5 on XL-Sum Bengali Dataset for Text Summarization** Jan. 2023 - Jun. 2023
CSE495: Natural Language Processing
 - This project involves fine-tuning a pre-trained mT5 model on the XL-Sum Bengali dataset for text summarization tasks, followed by a comprehensive evaluation using ROUGE metrics.
 - **Tools/Technology:** Python, PyTorch, HuggingFace, Kaggle
 - **Github:** [Code]
- Image-to-Image Translation via GAN to Address Class Imbalance** May 2022 - Sep. 2022
CSE465: Pattern Recognition and Neural Network
 - Leveraging StyleGAN2-ADA, this project mitigates class imbalance in the ISIC-2016 dataset by generating synthetic images, while also utilizing convolutional neural networks (CNNs) for training a skin lesion classifier.
 - **Tools/Technology:** Python, TensorFlow, Keras, PyTorch, Kaggle
 - [Matured to bachelor's thesis]

Heart Disease Detection Using Machine Learning	May 2022 - Sep. 2022
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CSE445: Machine Learning

- Predicting heart disease probability and categorizing patient risk levels using machine learning algorithms: Logistic Regression, Random Forest, Decision Tree, KNN, and Naive Bayes.
- **Tools/Technology:** Python, Scikit-learn
- **Github:** [\[Code\]](#)

Internship Repository System	Jan. 2022 - May 2022
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CSE482: Internet and Web Technology

- A sophisticated internship repository web application featuring a comprehensive search menu designed to efficiently catalog and showcase completed internships pursued by students across various universities and diverse companies.
- **Tools/Technology:** HTML5, CSS3, Sass, JavaScript, Ajax, PHP, MySQL
- **Github:** [\[Code\]](#)

ScholarLink: Academic Management and Scholarship System	Sep. 2021 - Jan 2022
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CSE327: Software Engineering

- ScholarLink is an innovative web application that transforms academic management, offering students seamless online course registration, grade tracking, and scholarship applications, while enhancing faculty course management and administrative control.
- **Tools/Technology:** HTML5, CSS3, Bootstrap 5, JavaScript, Node.js, Express.js, MongoDB, Mongoose ODM
- **Github:** [\[Code\]](#)

16-bit Single Cycle RISC based Processor	Jan. 2021 - May 2021
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CSE332: Computer Organization and Architecture

- A simulation of 16 bit single-cycle RISC based CPU including ISA, Assembler and Data-path.
- **Tools/Technology:** Python, Assembly Language, Logisim
- **Github:** [\[Code\]](#)

SKILLS

Programming Languages: Python, C/C++

Frameworks: TensorFlow, Keras, PyTorch

Libraries: Scikit-learn, OpenCV, Pandas, Matplotlib

Front-end: HTML, CSS, JavaScript

Miscellaneous: GitHub, Git, L^AT_EX

HONORS & AWARDS

Top 10 out of 102 teams , in Innovation Challenge (IC) Season 13, Capstone Project Showcase	2023
50% tuition waiver , in recognition of academic performances at North South University	2022
25% tuition waiver , in recognition of academic performances at North South University	2020

CERTIFICATES

IELTS , <i>Speaking: 7.5, Reading: 7.5, Writing: 7, Listening: 6.5; Overall: 7.0</i>	2023
Coursera , Deep Learning Specialization, Neural Networks and Deep Learning; <i>Grade: 97%</i>	2022
Code with Mosh , Ultimate Java Part 1: Fundamentals	2020
Code with Mosh , Ultimate Java Part 2: Object-oriented Programming	2020

REFERENCES

Dr. Nabeel Mohammed

Associate Professor
Department of Electrical and Computer Engineering
North South University
Dhaka, Bangladesh
Email: nabeel.mohammed@northsouth.edu
Contact Number: (+880) 1720505591

Dr. Mohammad Ashrafuzzaman Khan

Assistant Professor
Department of Electrical and Computer Engineering
North South University
Dhaka, Bangladesh
Email: mohammad.khan02@northsouth.edu
Contact Number: (+880) 1752576450