Anika Tahsin Meem

Curriculum Vitae

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Bashundhara R/A - Dhaka,Bangladesh

Linkedin Google Scholar

WORK EXPERIENCE

Research Assistant

North South University, Dhaka, Bangladesh

Advisor: **Md. Mamun Molla** | **Research Group**: Center of Applied and Computational Science at NSU

Aug 2024 - Present

Forced Convection of Non-Newtonian Fluid Flow over Two Heated Elliptic Cylinders in a Channel

- Co-authored the research proposal for fund management, collaborating with corresponding professor to secure funding for this project
- Optimized engineering systems like heat exchangers and reactors, improving heat transfer, mass transport, and flow stability in non-Newtonian fluids.

Nov 2023 - July 2024

Numerical Simulation of Pulsatile Non-Newtonian Blood Flow with Gold Nanoparticles in a Bifurcated Artery with an Aneurysm under a Bio-Magnetic Field *(Submitted to Physics Scripta)*

- Developed mathematical models of human blood flow incorporating nanofluids.
- Utilized the finite element method (FEM) to analyze bio-convection and heat transfer in aneurysmal arteries with gold nanoparticles under a magnetic field.
- Contributed to research optimizing therapeutic strategies in cardiovascular medicine.

IT Coordinator

Jan 2023 - Oct 2023

International Study Destination (ISD), Dhaka, Bangladesh

- Front-end Development • Illustration • Poster Design • SOP review
- Operations & Marketing • Meeting Conduct • Video Editing

Software Development Intern (Remote)

Oct 2021 - Feb 2023

GaoTek Inc., New York

- Team Leader • Website Maintaining • Digital Marketing

EDUCATION

2022

Bachelor of Science in Computer Science and Engineering

North South University, Dhaka, Bangladesh

CGPA: **3.43/4.0**

RESEARCH INTERESTS

- Data Science,
- Medical Image Processing,
- Computer Vision,
- Computational Psychology,
- Time-Series.
- CFD

BACHELOR THESIS

Developed an AI-powered healthcare platform

- Developed a multi-disease detection system using deep learning and AI techniques.
- Diagnoses six diseases with multiple DL models 88%-99% accuracy—pneumonia, malaria, melanoma, brain tumor, breast cancer, and lung cancer.
- Integrated a Django-based web platform with telemedicine features.
- Offers video consultations and online prescriptions for accessible, affordable healthcare.

DIRECTED THESIS

Predicting Cryptocurrency Price Drops Using Time-Series Analysis and Deep Learning

- Developed a deep learning stacking ensemble model for cryptocurrency price drop prediction.
- Utilized CNN, LSTM, BiLSTM, and GRU to analyze 20 key market parameters.
- Achieved high RMSE score between 0.0089 and 1.3229, outperforming existing models.
- Helps investors make proactive, informed decisions in a volatile market.

RESEARCH WORK

Gastrointestinal Cancer Image Semantic Segmentation

(Ongoing)

- Developed an advanced semantic segmentation model for Multi-class gastrointestinal cancer using improved Vision Transformer and connection network.
- Achieved BCE loss of 0.0716, DICE score of 0.9350, and IoU of 0.9218; validation scores of 0.9109 and 0.9022.
- Used XAI (Grad-CAM and Grad-CAM++) for transparent visual explanations.
- Integrated model into a Django web platform for real-time cancerous region detection in GI tract images.

A Cost-Effective ML and DL Solutions for Predicting Arsenic Contamination in Groundwater

(Ongoing)

- Developed a cost-effective arsenic contamination prediction model using several ML/DL algorithms (e.g., RF, DT, XGBoot, ANN, GAN).
- Used accessible data like latitude, well depth, and lithology to minimize reliance on post-digging tests.
- Phased approach: Phase 1 with six parameters, Phase 2 with 13 parameters, enhancing detection accuracy around 95%.
- Built a Django web app and XAI for instant arsenic risk feedback based on user-input parameters.

PROJECT EXPERIENCE

2019	**Junior Deign Project:** Covid-19 detection using Deep learning and AI
2019	**Software Development:** Web-Based Lost and Found System.
2020	**Deep-Learning:** Based on MRI Brain Tumor Classification Using CNN and Autoencoder.
2020	**DBMS:** Direct From My Kitchen (Food App).
2021	**Machine Learning:** AI Fake News Detection Using Naive Bayes.
2021	**Machine Learning:** Identifying Socially Isolated People Using LSNS6.

JOURNAL PAPER

Published	Meem, Anika Tahsin, Mohammad Monirujjaman Khan, Mehedi Masud, and Sultan Aljahdali. "Prediction of Covid-19 Based on Chest X-Ray Images Using Deep Learning with CNN." Computer Systems Science & Engineering 41, no. 3 (2022).
Under Review	Numerical Simulation of Pulsatile Non-Newtonian Blood Flow with Gold Nanoparticles in a Bifurcated Artery with an Aneurysm under a Bio-Magnetic Field.

CERTIFIED COURSE

Pantech Solutions	Master Class of Machine Learning and Artificial Intelligence.
Open Weaver	Build an AI Fake News Detection.
Udemy	Google Data Studio A-Z for Data Visualization and Dashboards.
Udemy	Professional Adobe Photoshop CC Course with Advance Training

TECHNICAL SKILLS

Programming & Web Development Languages	Python, C, HTML, CSS, Java, JavaScript, SQL
Frameworks	Django, GUI, FLASK
Tools	Tensorflow/Keras, Latex, Git, VSCode, Google Colab
Software	Canva, Adobe Illustration, Figma, Matlab, COMSOL, Tecplot

SOFT SKILLS

- Collaborative Team Player,
- Adaptive Contributor,
- Detail-Oriented,
- Insightful Data Navigator,
- Compelling Storyteller,
- Time-management.

SCHOLARSHIPS

Tuition Waiver	**North South University**	***Course**: Mat112, Eng102*
General Scholarship	Junior School Certificate - 2011	

LANGUAGES

English Professional
Bangla Native

***Duolingo**: 115 (nblt 95)*

OTHER ACTIVITIES

Assisted in Peer Review of Published Research

Assisted my research supervisor in reviewing multiple journal articles, providing insights on methodologies and key findings.

- International Journal for Numerical Methods in Biomedical Engineering
- Journal of Nanomaterials, Nanoengineering and Nanosystems
- Multidiscipline Modeling in Materials and Structures
- Modern Physics Letters B

Interests

Poetry, Painting.

LINKS

Email 2 meemanika70@gmail.com
Portfolio Website My Portfolio
Skype live:.cid.e82f986f516d5924
ResearchGate Anika-Meem
Github AnikaMeem
Instagram _dear_anomaly_

REFERENCES

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   North South University, Dhaka, Bangladesh
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2. **Shahnewaz Siddique**
   Associate Professor | Department of Electrical and Computer Engineering
   North South University, Dhaka, Bangladesh
   Email: shahnewaz.siddique@northsouth.edu
3. **Mahdy Rahman Chowdhury**
   Associate Professor | Department of Electrical and Computer Engineering
   North South University, Dhaka, Bangladesh
   Phone: +8801931451259
   Email: mahdy.chowdhury@northsouth.edu