

Anika Tahsin Meem

Curriculum Vitae

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Bashundhara R/A - Dhaka, Bangladesh

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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	Machine Learning-Driven CFD: Insights into Natural Convection and Non-Newtonian Fluid Dynamics Around Heated Elliptic cylinders (Under Review) <ul style="list-style-type: none">Co-authored the research proposal for fund management, collaborating with corresponding professor to secure funding for this projectOptimized engineering systems like heat exchangers and reactors, improving heat transfer, mass transport, and flow stability in non-Newtonian fluids.Applied surrogate machine learning for correlation and providing quicker and more accurate solutions for industrial, renewable energy, and thermal management applications.
Nov 2023 - July 2024	Bio-Magnetic Field Effects on Pulsatile Non-Newtonian Blood Flow with Gold Nanoparticles in a Bifurcated Artery in Presence of Aneurysm (Accepted to Physics Scripta) <ul style="list-style-type: none">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	International Study Destination (ISD), Dhaka, Bangladesh <ul style="list-style-type: none">Front-end Development • Illustration • Poster Design • SOP reviewOperations & Marketing • Meeting Conduct • Video Editing
Software Development Intern (Remote)	GaoTek Inc., New York <ul style="list-style-type: none">Team Leader • Website Maintaining • Digital Marketing
Oct 2021 - Feb 2023	

EDUCATION

2022	Bachelor of Science in Computer Science and Engineering North South University, Dhaka, Bangladesh <i>CGPA: 3.29/4.0</i>
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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, XGBoost, 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).
Published	Akter, Shapla, Anika Tahsin Meem, Hasina Akter, Md Mamun Molla, Souhail Souai, and Saiful Islam. "Thermophoretic effects on thermosolutal natural convection in concentric cylindrical systems." Chinese Journal of Physics (2025).

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
Bangla

Professional
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

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ResearchGate

Anika-Meem

Instagram

dear_anomaly

REFERENCES

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