Nazihah Islam Nawreen

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ABOUT ME

A Computer Science graduate with hands-on experience in machine learning, deep learning, and multi-modal data analysis. Skilled in medical image classification and predictive modeling, and driven to develop AI solutions with real-world impact.

EDUCATION AND TRAINING

10/2021 – 08/2025 Dhaka, Bangladesh
BACHELOR'S IN COMPUTER SCIENCE BRAC University

Website https://www.bracu.ac.bd/ | **Final grade** 3.90 |

Thesis A Robust Ensemble Learning Framework for Binary and Multiclass Malware Classification Over Diverse Datasets

RESEARCH

07/2025 – 10/2025
Exploring Fusion Strategies for Multi-Modal Pneumonia Classification with Modality-Specific Explainability (Under Review)

- Developed multi-modal pneumonia classifier combining chest X-rays with patient metadata for improved diagnostic accuracy.
- Compared early, intermediate, and late fusion strategies; intermediate and late fusion achieved highest performance.
- Applied GradCAM and LIME for visual and tabular explainability, highlighting metadata's contribution.

PUBLICATIONS

2025
A Hybrid Machine Learning Framework for Delay Predictions in Tactile Internet Applications

- Developed a hybrid ML model to predict delay in Tactile Internet applications using the JIGSAWS dataset.
- Implemented end-to-end data preprocessing, feature extraction, and ML workflow design aligned with data engineering principles.
- The model combines Random Forest (RF) and Gradient Boosting (GB) to leverage the strengths of both.

Authors: Azwad Aziz, Nazihah Islam Nawreen, Amitabha Chakrabarty | **Journal Name**: 6th International Conference on Telecommunications and Photonics (ICTP) | **Publisher**: IEEE Xplore

WORK EXPERIENCE

BRAC UNIVERSITY

Department Mathematics and Natural Sciences

TEACHING ASSISTANT (INTEGRAL CALCULUS AND DIFFERENTIAL EQUATIONS) – 05/2024 – 05/2025

- Guided students through mathematical reasoning and problem-solving relevant to data analysis.
- Reinforced strong mathematical foundations among students essential for ML and AI.
- Assisted in grading assignments and provided weekly consultation sessions.

PROJECTS

Skin Lesion Classification

- Preprocessed 39k+ dermoscopic images with augmentation using Keras ImageDataGenerator.
- Built and trained a custom CNN with regularization and batch normalization.
- Applied ReduceLROnPlateau and EarlyStopping to optimize model performance.

Coronary Heart Disease Prediction

- Developed a full ETL-style data pipeline: data cleaning, transformation, handling missing values, and feature selection.
- Performed exploratory data analysis with correlation heatmaps to identify redundant features and improve model efficiency.
- Trained and optimized the XGBoost model.

(Live Demo)

RECENT CONTESTS

04/2025
Data Visionary: National Data Analytics Competition (NDAC 2025)

- Processed and analyzed competition dataset.
- Performed data cleaning, feature engineering, and model evaluation.

HONOURS AND AWARDS

10/2021
Scholarship based on Previous Academic Results – BRAC University

Maintained a CGPA of 3.80+ to maintain the 50% scholarship throughout the academic period.

05/2022
Excellence in Result – Maple Leaf International School

Received this award of excellence by my school for exceptional results in A-levels.

SKILLS

Programming & AI

Python | C | Pandas | Matplotlib | HTML | Flask | CSS | Jinja2 | SQL | NumPy | Machine Learning | Deep Learning

Databases

MySQL | MongoDB | Database Design | ER Modeling

Tools

GitHub | VS Code | Jupyter Notebook | Kaggle | Google Colab | Linux | LaTeX

LANGUAGE SKILLS

Mother tongue(s): **BENGALI**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C2	C1	C2	C1	B2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

CERTIFICATIONS

DataCamp
Introduction to Deep Learning with Keras

Certificate

DataCamp
Machine Learning Specialization

Certificate

COMMUNICATION AND INTERPERSONAL SKILLS

Effective Communication and Team Collaboration

- Strong written and verbal communication skills developed through research, presentations, and teaching assistance.
- Collaborative problem-solving and teamwork demonstrated across academic projects and competitions.

VOLUNTEERING

Active member of MLIS Photography Club

- Collaborated with club members to plan and organize photo shoots and exhibitions.
- Captured high-quality photographs during school events, activities, and celebrations. (Certificate)