

SUDIPTA MONDAL

Dhaka, Bangladesh

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in [LinkedIn](#) [GitHub](#) [Google Scholar](#) [Portfolio Website](#)

Education

Brac University

Summer 2023 – Present

Master of Science in Computer Science and Engineering

CGPA : 3.88/4.00 (all coursework completed, thesis pending)

Dhaka, Bangladesh

Thesis Topic: **Self Supervised Learning**

Supervisor: Md. Golam Rabiul Alam, PhD

Brac University

2016 – 2021

Bachelor of Science in Computer Science and Engineering

CGPA: 3.49/4.00

Dhaka, Bangladesh

Undergraduate Thesis: Implementation of Real-Time Learning on Homomorphically Encrypted Visual Inputs

Supervisor: Muhammad Iqbal Hossain, PhD.

Research Interest

Machine Learning, Deep Learning, Natural Language Processing, Computer Vision, Self-Supervised Learning

Selected Publications

Interpretable Bangla Sarcasm Detection using BERT and Explainable AI

2023 IEEE 13th Annual Computing and Communication Workshop and Conference (CCWC)

- Developed a BERT-based model for Bangla sarcasm detection using the BanglaSarc dataset, achieving 99.60% accuracy and incorporating LIME for model explainability, outperforming traditional models (89.93%)

A Comprehensive Audio Dataset for Emotional Context Analysis in Advertisements

Under Review: Data in Brief — Journal, Impact Factor 1.0

- Developed a dataset of 1,000 audio clips and emotional statements to assess ad effectiveness, providing a standardized resource for testing classification algorithms on audio data for emotion recognition

A Smart Tutor Avatar for Mimicking Characters of Bangla Sign Language

Submitted at the 4th ICREST'25

- Developed a smart avatar tutor that mimics 49 Bangla Sign Language (BSL) characters using image processing and machine learning to analyze hand gestures, providing real-time feedback and enhancing learning outcomes for the hearing-impaired community

Explainable Fake News Classification using Support Vector Machine and Model-Agnostic Explanation

Submitted at the ICRPSET 2024 (IEEE)

- Compared multiple ML models using CountVectorizer and TF-IDF to determine the best feature extraction method for fake news detection, and applied LIME to explain the predictions of the top-performing model(SVM)

Current Research

A Systematic Review on the use of AI and ML for Sentiment Analysis

- Conducted a systematic review comparing AI and machine learning approaches for sentiment analysis, highlighting key insights, research directions, and limitations for future study

An Interpretable Approach to Classify and Explain Online Hate Speech using LIME

- Conducted a comparative analysis of machine learning and deep learning models, with the Random Forest model achieving a 93.7% F1-score and explained using LIME on test data

Explainable Flight Fare Prediction using Machine Learning and LIME

- Utilized multiple machine learning models to predict flight fare trends using historical data, incorporating PCA for dimensionality reduction and LIME to explain feature influence

Academic Projects

Deep Learning Based Online Sexism Detection | CSE712: Symbolic Machine Learning-II

- * Developed a neural network using Word2Vec embeddings to detect and categorize sexist language, achieving F1 scores of 0.77 for detection and 0.43 for categorization.

Social Media Rumor Detection using Machine Learning | CSE718: Petri Net Theory and Modeling of Systems

- * Built a machine learning system for detecting social media rumors by applying two feature extraction methods for data vectorization, training multiple classification models, and identifying SVM as the top-performing model

Technical Skills

Languages: Python

Developer Tools: PyCharm, Jupyter Notebooks, Google Colab, VS Code

Operating Systems: Linux, Windows

Machine Learning Frameworks: Tensorflow, Scikit-learn, Keras

Others: Git, SQL, Latex

Certificate & Awards

VC's List and Dean's List Award, Brac University

- Earned a position on the VC's List for the Spring 2020 semester with a **4.00 GPA**
- Earned a place on the Dean's List for two semesters with a **3.80** and **3.87 GPA**
- Merit Scholarship Based on BracU Academic Results for the Master's degree (M.Sc.) in Spring & Summer 2024

Online Course Certificates

Data Analyst with Python | DataCamp

Course duration: 36 hours

Aug 2024

Crash Course on Python | Coursera

Course duration: 39 hours

Mar 2023

SQL for Data Science | Coursera

Course duration: 18 hours

Apr 2022

Standardized Test Score

IELTS: Overall 7.0 (Listening 8.5; Reading 6.5; Writing 7.0; Speaking 6.0)

GRE: 303 (Quantitative Reasoning 156; Verbal Reasoning 147; Analytical Writing Assessment 3)

Extra Curricular

President

Brac University Film Club

2019-2020

Volunteer

12th & 13th Convocation of Brac University

2017 & 2019

Public Relations Coordinator

HULT Prize at Brac University

2018