ALISTAIR BISWAS

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Research interests

Deep Learning, Machine Learning, Natural Language Processing, Computer Vision, Large Language Models, Image Processing.

Education

2021 – Present **Ahsanullah University of Science and Technology** – Dhaka, Bangladesh
BSc in Computer Science and Engineering
Thesis: Algorithmic Treding with Machine Learning - A Case Study on Dhaka Stock Exchane.
Supervisor: Prof. Dr Mohammad Shafiul Alam.
CGPA: *3.765 out of 4.00(up to 4.1).*

2017 – 2019 **Government Science College** – Dhaka, Bangladesh
HSC (Science)
GPA: *5.00 out of 5.00.*

2012 – 2017 **Alfadanga A.Z Govt. Model High School** – Faridpur
SSC (Science)
GPA: *5.00 out of 5.00.*

Honors and scholarships

2021, 2023, 2024 Half Free Tuition Fee Waiver based on Academic Result (Ahsanullah University of Science and Technology)

2011, 2014, 2017 Government Education Board Scholarship (Dhaka Board)

Research experience

December 2023 – Present **Algorithmic Treading with Machine Learning - A Case Study on Dhaka Stock Exchange**
Mentors: Professor Dr. Mohammad Shafiul Alam (Ahsanullah University of Science and Technology).
Research on stock price prediction, divergence detection in the daily chart using custom algorithms and identifying its type. Build some treading strategy based on technical indicators and perform back-testing on historical data.

December 2023 – February 2024

Beyond the Laughter: Detecting Hatefull Memes with Deep Learning

Mentors: Md. Tanvir Rouf Shawon, Mr. Rayhan Tanvir (Ahsanullah University of Science and Technology).

Conducted research on the MUTE multimodal hate speech dataset, which includes hateful memes (images and captions).Applied deep learning models to both visual and textual data, evaluating them individually and in combination (multimodal approach). Compared performance metrics across different models. Summary of findings available here.

December 2023 – February 2024

Assessing Credit Risk of Bank Customers using Machine Learning Algorithms

Mentors: Mr. Faisal Muhammad Shah, Md. Zahid Hasan (Ahsanullah University of Science and Technology).

This research focused on predicting which bank customers are likely to be risky in terms of credit repayment. Using a kaggle 'credit risk' dataset, advanced feature engineering techniques were applied to prepare the data, followed by training various machine learning models. The models were compared to evaluate their result in predicting which customers would be granted credit and which would be too risky. Summary of findings available here.

July 2024 – September 2024

Classification of Forest Cover Type Based on Soil Characteristics using Machine Learning

Mentors: Professor Dr. Md. Shamim Akhter, Mr. Md. Zahid Hasan, Mr. Md Rasheduzzaman (Ahsanullah University of Science and Technology).

This research focused on classifying forest cover types based on soil characteristics through big data analysis. Exploratory Data Analysis (EDA) was conducted to uncover patterns in the data, and the PySpark library was employed to implement machine learning models. The study aimed to improve classification accuracy by handling large datasets efficiently. Summary of findings available here.

January 2024 – February 2024

Detecting Covid19 and Pneumonia from Chest X-ray Images using Hybrid Deep Learning Models

Mentors: Md. Tanvir Rouf Shawon, Mr. Rayhan Tanvir (Ahsanullah University of Science and Technology).

This research aimed to detect Covid-19 and pneumonia from chest X-ray images using custom deep learning models. Models like CNN, RNN, LSTM, BiLSTM, and a hybrid CNN + BiLSTM were applied, with the hybrid model outperforming the single models in accuracy and performance.

July 2023 – September 2024

Stroke Risk Prediction using Machine Learning

Mentors: Mr. Mohammad Marufur Rahman (Ahsanullah University of Science and Technology). This research focused on predicting the risk of stroke using machine learning techniques. Various models were applied to analyze patient data and predict the likelihood of stroke occurrence, aiming to improve early detection and intervention by identifying high-risk individuals through data-driven insights.

Professional memberships

2022 – 2024 AUST Programming and Informatics Club

Executive Member

2021 – 2024 AUST Innovation and Design Club

Executive Member

Technical skills

Programming languages:

Python, C, C++, Java (Proficient in)

Kotlin, C#, HTML, CSS, PHP, JavaScript (Familiar with)

Database:

MySQL, Microsoft SQL Management, Oracle

Deep Learning Tools:

Scikit-Learn, Keras, Tensorflow, PyTorch

Software:

LaTeX, Git.

Languages:

Bengai (Native), English (Fluent)

Other interests

Reading, Chess, Football, Tennis, etc.