

Sagor Aich

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Academic credentials

Rajshahi University of Engineering & Technology (RUET) , Rajshahi, Bangladesh. B.Sc. in Computer Science and Engineering.	Jan 2018–Jan 2025
<ul style="list-style-type: none">CGPA: 3.01/4.0 (Last 3 semesters GPA: 3.42, 3.49, 3.52)Noteable coursework: Discrete Mathematics, Applied Statistics and Queuing Theory, Artificial Intelligence, Digital Image Processing, Neural Networks and Fuzzy Systems.	
Cambrian College , Dhaka, Bangladesh. Higher Secondary School Certificate (HSC) Examination.	2015 – 17
<ul style="list-style-type: none">GPA: 5.00/5.00	
Falaya Chandkati Agrani Secondary School , Tala, Satkhira, Bangladesh. Secondary School Certificate (SSC) Examination.	2010 – 15
<ul style="list-style-type: none">GPA: 5.00/5.00	

Skills

Languages: C/C++ , Java, Objective C/C++/Java, Python, JavaScript, MATLAB, HTML, CSS.

Databases: MySQL, SQLite.

Web Frameworks: Bootstrap, Flask.

Technologies: LaTeX, Git, Adobe Lightroom, Adobe Photoshop.

Machine Learning/AI: PyTorch, Exploratory Data Analysis(EDA), CNN, Long Short-Term Memory (LSTM), Generative Adversarial Networks (GAN), Natural Language Processing (NLP), Large Language Models (LLM), MLOps, Computer Vision, Generative AI, Fine Tuning LLM's, Recurrent Neural Networks, Prompt Engineering, XAI (LIME, SHAP).

Research Experience

Undergraduate Research Work , Rajshahi University of Engineering and Technology.	2022-23
Thesis title: “A Comparative Analysis of Various Attention Mechanism Approaches for Hyperspectral Image Classification.”	
Explored several attention mechanisms like Double Branch Multi Attention (DBMA) Mechanism, Double Branch Dual Attention (DBDA) Mechanism, and Attention Based Adaptive Spectral Spatial Kernel Mechanism on three datasets (Indian Pines (IP), University of Pavia (UP), Kennedy Space Center (KSC)).	
Research Supervisor: Sadia Zaman Mishu, Assistant Professor, Dept. of CSE, RUET.	

Publications

Mathematical Biosciences Journal of Elsevier. under review	2025
Title: “Bayesian Physics-Informed Neural Networks for Parameter Inference and Uncertainty Quantification in Reaction-Diffusion Models of Wound Healing”	
This paper introduces a Bayesian Physics-Informed Neural Network (BPINN) framework to overcome the challenge of uncertain parameters in biological models. The method successfully infers key parameters from extremely sparse data and can diagnose when a parameter is non-identifiable, as demonstrated with a wound healing model. This provides a powerful tool for developing reliable, personalized models and building trust in computational medicine..	
2nd International Conference on Next-Generation Computing, IoT and Machine Learning (IEEE NCIM). Yet to be online	2025
Title: “Distinguishing Human-Written and AI-Generated Text: A Comprehensive Study Using Explainable Artificial Intelligence in Text Classification”	
This study combines Explainable AI (XAI) with a fine-tuned BERT model for text classification, using LIME to	

enhance transparency. BERT achieved 100% accuracy, outperforming Random Forests, while LIME addressed interpretability challenges, bridging the gap between performance and explainability in AI systems.

2nd International Conference on Next-Generation Computing, IoT and Machine Learning (IEEE NCIM Yet to be online) 2025

Title: “Analyzing Bot Activity and Political Discourse in the 2024 U.S. Presidential Election: A Machine Learning Approach to Misinformation and Manipulation”

This study examines bot activity in 50,191 tweets from the 2024 U.S. Presidential Election using Botometer and a Random Forest model. Despite a low bot presence (2.22%), bots show strategic impact—especially in cross-party debates. A novel framework reveals platform-specific manipulation patterns and political engagement dynamics..

4th International Conference on Electrical, Computer and Communication Engineering(ECCE). [IEEE Xplore](#) 2025

Title: “Distinguishing Between Formal and Colloquial: A Multilingual BERT Approach to Bengali Language Classification”

This study tackles the challenge of Bengali’s dual-register structure—Sadhu and Cholit—in NLP tasks. By fine-tuning mBERT on a Mendeley dataset, it achieved 94.08% accuracy, improving text classification and translation for Bengali and advancing low-resource language processing..

4th International Conference on Electrical, Computer and Communication Engineering(ECCE). [IEEE Xplore](#) 2025

Title: “Advancing Low-Resource NLP: Contextual Question Answering for Bengali Language Using Llama.”

This study develops a Bengali question-answering system using the Llama 3.2-3B-Instruct model with transfer learning on a synthetic SQuAD 2.0 dataset. It achieves a 42.77% F1 score, improving 4.02% over mBERT, highlighting transfer learning’s potential for enhancing QA in low-resource languages like Bengali.

Projects

Credit Card Customer Churn Prediction [Kaggle](#) 2024

This project uses a simple ANN on a Kaggle dataset, featuring two hidden layers with 11 sigmoid-activated neurons each and a single output neuron. Trained over 100 epochs, the model predicts credit card adoption: ‘1’ for yes, ‘0’ for no.

Heart disease prediction [Kaggle](#) 2024

A project on machine learning (ML) using logistic regression, random forest, gradient boosting, and support vector classifier where ‘1’ presents ‘defective hearts’, ‘0’ presents ‘healthy hearts’, hyperparameter tuning is done by GridSearchCV and RandomSearchCV. The dataset is collected from GitHub.

Achievements

- Undergraduate Government Scholarship, RUET, Rajshahi, Bangladesh. 2018
- Secondary School Certificate (SSC) Scholarship, Jashore Education Board, Jashore, Bangladesh. 2015
- Junior School Certificate (JSC) Scholarship, Jashore Education Board, Jashore, Bangladesh. 2012

Courses

World Health Organization (WHO) 2024

Course Title: Integrating Ethics and Governance into the Design of Artificial Intelligence Tools for Health.
Case Study: Cervical Cancer Screening.

Hewlett-Packard (HP) LIFE, Hewlett-Packard (HP) Foundation 2024

Course Title: "Data Science Analytics."

United Nations International Children’s Emergency Fund (UNICEF) 2024

Course Title: "Introduction to Humanitarian Response Funding Processes, Appeals and Pooled Funds."

Clear pronunciation, recitation, and presentation in Bangla 2024

A 2.5-month course from a renowned trainer to improve the presentation of the Bangla language.

Basic Photography Course (54th Batch) from ‘Pathshala South Asian Media Institute 2024

A 1.5-month offline course covering photography’s history, visual influence, camera mechanics, exposure, composition, lighting, darkroom techniques, and both digital and outdoor photography practices.

Extra-curricular activities

- Designated as Organising Secretary (OS), Photographic Society of RUET (PSR). 2020
Took several classes on photography to nourish the club’s members.
- Designated as Secretary of Internal Affairs, Photographic Society of RUET (PSR). 2019
- Designated as a Member, Photographic Society of RUET (PSR). 2018
- Designated as a Member, ‘Onuronon’ (RUET Cultural Club). 2018
- Designated as a Member, RUET Debating Club (RUET DC). . 2018

Linguistic Proficiency

- English (Fluent working proficiency).
- Bangla (Native language).
- Hindi (comprehend spoken Hindi).

References

Sadia Zaman Mishu

Assistant Professor, Department of Computer Science & Engineering, RUET.

Md. Azmain Yakin Srizon

Assistant Professor, Department of Computer Science & Engineering, RUET.

Md. Mazharul Islam

Lecturer, Department of Computer Science & Engineering, RUET.