Utsha Das

Assistant Professor, Department of Computer Science and Engineering
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Google Scholar | ResearchGate | GitHub

Research Interests

Machine Learning · Deep Learning · Explainable AI (XAI) · Computer Vision · Natural Language Processing · Data Science · Health Informatics

My research focuses on building machine learning systems that are accurate, robust, and interpretable. I am particularly interested in feature selection and representation learning for high-dimensional data, deep learning architectures for image and text understanding, and explainable AI methods that make model decisions transparent and trustworthy. I aim to develop reliable, data-driven solutions to real-world problems, with healthcare as a key application area.

Education

Rajshahi University of Engineering & Technology (RUET) — Rajshahi, Bangladesh
M.Sc. in Computer Science and Engineering (Major: Machine Learning) — Sep 2021 – Jan 2024

- CGPA: **3.92 / 4.00**
- Research on explainable ML for early-stage diabetes prediction; supervised by Prof. Dr. Boshir Ahmed

Rajshahi University of Engineering & Technology (RUET) — Rajshahi, Bangladesh
B.Sc. in Computer Science and Engineering — Jan 2015 – Aug 2019

- CGPA: **3.79 / 4.00** — ranked **6th of 112** students
- Undergraduate research on gene-expression analysis for cancer and Alzheimer's disease; supervised by Prof. Dr. Md. Al Mehedi Hasan

Professional Experience

Rajshahi University of Engineering & Technology (RUET) — Rajshahi, Bangladesh
Assistant Professor, Department of CSE — May 2025 – Present

- Undergraduate Program Coordinator, Department of CSE: oversee the B.Sc. program, including course planning, academic scheduling and student advising

Rajshahi University of Engineering & Technology (RUET) — Rajshahi, Bangladesh
Lecturer, Department of CSE — Jan 2024 – May 2025

- Teach undergraduate courses in computer science and engineering
- Supervise undergraduate thesis research in machine learning, primarily for healthcare, leading to six co-authored conference papers (2024–Present)

Bangladesh Bank — Dhaka, Bangladesh
Assistant Director (ICT), Directorate of ICT — Dec 2023 – Jan 2024

Bangladesh Rural Electrification Board (BREB) — Dhaka, Bangladesh
Assistant General Manager (IT), Directorate of ICT — Oct 2021 – Dec 2023

Green University of Bangladesh (GUB) — Dhaka, Bangladesh
Lecturer, Department of CSE — Sep 2019 – Sep 2021

- Taught undergraduate CSE courses and mentored IEEE student branch activities
- Continued collaborative research in ML-based disease prediction (5 papers, 2020–2021)

Publications

15 peer-reviewed papers in IEEE and ACM conference proceedings; 7 as first author. Supervised student work is listed with my name as co-/senior author.

[C1] T. B. Kobir, **U. Das**, A. M. Khan, and K. A. Khan, "Robust Spam Detection in Text Data Using Machine Learning Techniques," *IEEE 2nd Int. Conf. on Quantum Photonics, Artificial Intelligence & Networking (QPAIN)*, 2026. doi:10.1109/QPAIN69676.2026.11546614

[C2] S. Paul and **U. Das**, "Machine Learning–Based Risk Prediction and Explainable Modeling of Cardiovascular Disease Using Clinical, Biochemical, and Lifestyle Data from a Bangladeshi Cohort," *5th Int. Conf. on Electrical, Computer & Telecommunication Engineering (ICECTE)*, Rajshahi, 2026, pp. 1–6. doi:10.1109/ICECTE69292.2026.11429218

[C3] S. Ferdousi, **U. Das**, and T. M. Zihan, "An Explainable Multi-Class Brain Tumor Classifier Using EfficientNetV2 with Hybrid Attention Mechanisms," *IEEE 2nd Int. Conf. on Computing, Applications and Systems (COMPAS)*, Kushtia, 2025, pp. 1–6. doi:10.1109/COMPAS67506.2025.11381872

[C4] M. I. S. Raiyan, S. Sarker, **U. Das**, E. Ahammed, M. T. Zaman, and M. Yahan, "Identification of Potential Genomic Biomarkers in Pancreatic Cancer, Colon Cancer, and Ulcerative Colitis Using Integrated Machine Learning and Bioinformatics Approaches," *Int. Conf. on Quantum Photonics, Artificial Intelligence, and Networking (QPAIN)*, Rangpur, 2025, pp. 1–6. doi:10.1109/QPAIN66474.2025.11171969

[C5] K. A. Khan, **U. Das**, M. T. Raihan, M. H. Reza, and M. Billah, "A Machine Learning Framework for Non-invasive Hepatitis C Virus Detection Using Feature Selection," *Int. Conf. on Quantum Photonics, Artificial Intelligence, and Networking (QPAIN)*, Rangpur, 2025.

[C6] M. S. Hossian, M. A. Hossain, and **U. Das**, "A Low-Cost Model for Lung Nodule Classification from 3D CT Images Using Feature-Fused Orthogonal Views with Parallel 2D CNNs," *Int. Conf. on Quantum Photonics, Artificial Intelligence, and Networking (QPAIN)*, Rangpur, 2025.

[C7] M. S. Hossian, M. A. Hossain, and **U. Das**, "Patch-Based Lung Nodule Malignancy Classification Using Vision Transformer with XAI Interpretation," *Int. Conf. on Quantum Photonics, Artificial Intelligence, and Networking (QPAIN)*, Rangpur, 2025.

[C8] **U. Das** and B. Ahmed, "An Explainable ML Approach for Diabetes Detection Using the Influential Features," *26th Int. Conf. on Computer and Information Technology (ICCIT)*, Cox's Bazar, 2023, pp. 1–5. doi:10.1109/ICCIT60459.2023.10441134

[C9] **U. Das** and B. Ahmed, "Identification of Influential Features for Diabetes Prediction at Early Stage," *4th Int. Conf. on Electrical, Computer & Telecommunication Engineering (ICECTE)*, Rajshahi, 2022, pp. 1–4. doi:10.1109/ICECTE57896.2022.10114554

[C10] M. A. M. Hasan, J. Shin, **U. Das**, and A. Y. Srizon, "Identifying Prognostic Features for Predicting Heart Failure by Using Machine Learning Algorithm," *11th Int. Conf. on Biomedical Engineering and Technology (ICBET, ACM)*, Tokyo, Japan, 2021, pp. 40–46. doi:10.1145/3460238.3460245

[C11] **U. Das**, A. Y. Srizon, M. A. Islam, D. S. Tonmoy, and M. A. M. Hasan, "Prognostic Biomarkers Identification for Diabetes Prediction by Utilizing Machine Learning Classifiers," *2nd Int. Conf. on Sustainable Technologies for Industry 4.0 (STI)*, Dhaka, 2020, pp. 1–6. doi:10.1109/STI50764.2020.9350498

[C12] **U. Das**, A. Y. Srizon, and M. A. M. Hasan, "Accurate Recognition of Coronary Artery Disease by Applying Machine Learning Classifiers," *23rd Int. Conf. on Computer and Information Technology (ICCIT)*, Dhaka, 2020, pp. 1–6. doi:10.1109/ICCIT51783.2020.9392732

[C13] **U. Das**, A. Y. Srizon, M. A. M. Hasan, J. Rahman, and M. K. B. Islam, "Effective Data Dimensionality Reduction Workflow for High-Dimensional Gene Expression Datasets," *IEEE Region 10 Symposium (TENSYMP)*, Dhaka, 2020, pp. 182–185. doi:10.1109/TENSYMP50017.2020.9230847

[C14] **U. Das**, M. A. M. Hasan, and J. Rahman, "Identification of Potential Biomarker Using Combined Analysis of Differentially Expressed Genes and miRNAs for Alzheimer's Disease," *5th Int. Conf. on Advances in Electrical Engineering (ICAEE)*, Dhaka, 2019, pp. 12–15. doi:10.1109/ICAEE48663.2019.8975487

[C15] **U. Das**, M. A. M. Hasan, and J. Rahman, "Influential Gene Identification for Cancer Classification," *Int. Conf. on Electrical, Computer and Communication Engineering (ECCE)*, Cox's Bazar, 2019, pp. 1–6. doi:10.1109/ECACE.2019.8679492

Honors & Awards

- Technical Scholarship for outstanding academic results, RUET 2015 – 2019
- General Grade Scholarship, SSC Examination, Jashore Education Board 2012

Professional Training

Post-Graduate Diploma in Excellence for Teaching and Learning Sep 2019 – Jan 2020
Center for Excellence in Teaching and Learning, Green University of Bangladesh

Professional Training: Red Hat Certified Engineer (RHCE) v8.0 Dec 2021 – Mar 2022
Bangladesh Power Management Institute (BPMI)

Technical Skills

Programming	Python, R, Java, C++, C
Databases	MySQL, Oracle, PL/SQL
Tools	LaTeX, MATLAB, Git, Linux (RHEL), Cisco Packet Tracer

English Proficiency

IELTS Academic: Overall 6.5 (Listening 7.5, Reading 6.5, Writing 6.0, Speaking 5.5)

Selected Projects

- **ICECTE 2026 Conference Website** — Developed and maintain the official website of the 5th IEEE-indexed International Conference on Electrical, Computer & Telecommunication Engineering (ICECTE), RUET. The PHP-based responsive site covers the call for papers, submission, registration, committees, speakers, schedule and proceedings archive. [icecte.ruet.ac.bd]
- **Text Sentiment Analysis Web App** — Naive Bayes classifier with NLTK, served via Flask. [GitHub]
- **Facebook Comment Sentiment Analysis** — Python tool that collects comments on a post and scores their sentiment with TextBlob. [GitHub]
- **Digital Voting System** — Java and MySQL application for managing elections. [GitHub]

Service, Leadership & Activities

- Mentor, IEEE Student Branch and IEEE Computer Society Student Branch Chapter, GUB
- Volunteer, 2nd Int. Conf. on Electrical, Computer & Telecommunication Engineering (ICECTE), RUET
- Class Representative, Department of CSE, RUET (4 years)
- Competitive programming: ACM-ICPC Dhaka Regional Preliminary (2017); UVa and CodeChef profiles

References

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Dr. Boshir Ahmed
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