

MD JOBAYER

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[Google Scholar](#) ◊ [ResearchGate](#) ◊ [GitHub](#) ◊ [LinkedIn](#)

RESEARCH INTEREST

biomedical engineering, signal processing, deep learning, generative AI, computer vision, medical imaging

EDUCATION

Bachelor of Science, BRAC University, Dhaka, BD

2019 - 2023

Electrical and Electronic Engineering, Major in Electronics

PUBLICATIONS

- [1] **M. Jobayer**, M. M. H. Shawon, M. R. Hasan, S. Ghosh, T. Gedeon, and M. Z. Hossain, "FunnelNet: An End-to-End Deep Learning Framework to Monitor Digital Heart Murmur in Real-Time," *Artificial Intelligence in Medicine*, 2025, *in review. DOI: [10.48550/arXiv.2405.09570](#).
- [2] **M. Jobayer**, M. B. U. Antor, M. M. H. Shawon, T. Mahmud, and A. Chowdhury, "AttDiCNN: Attentive Dilated Convolutional Neural Network for Automatic Sleep Staging using Visibility Graph and Force-directed Layout," *IEEE Transactions on Neural Networks and Learning Systems*, 2024, *in review. DOI: [10.48550/arXiv.2409.01962](#).
- [3] **M. Jobayer**, A. Taylor, M. R. Hasan, K. A. Ahmed, and M. Z. Hossain, "Machine Learning to Predict Gut Microbiomes of Agricultural Pests," *Neural Computing and Applications*, 2024, *accepted. DOI: [10.1101/2024.08.12.607564](#).
- [4] T. Mollick, **M. Jobayer**, M. S. Hossain, S. I. Khan, A. S. N. Huda, and S. R. Sabuj, "An interpretable deep learning model for solar power generation forecasting in a grid-connected hybrid solar system," *IEEE Journal of Photovoltaics*, 2024, *in review.
- [5] F. Nafis, N. Akib, M. Hossain, M. Z. Farasha, **M. Jobayer**, and M. M. H. Shawon, "CNN and Transfer Learning-based Deep Learning Architectures for Alzheimer's Disease Detection from MRI Scan: A Comparative Analysis," in *3rd BECITHCON, IEEE*, *accepted, 2024.
- [6] M. F. S. Naznin, A. I. Faruq, M. R. Tazwar, **M. Jobayer**, M. M. H. Shawon, and M. R. Hasan, "Cstrl: Context-driven sequential transfer learning for abstractive radiology report summarization," in *NAACL*, *in review, 2024.
- [7] Z. Chen, **M. Jobayer**, M. R. Hasan, K. A. Ahmed, and M. Z. Hossain, "MutFusVAE: Mutational Fusion Variational Autoencoder for Predicting Primary Sites of Cancer," *Procedia Computer Science*, 2023. DOI: [10.1016/j.procs.2023.08.166](#).
- [8] **M. Jobayer**, M. A. H. Shaikat, M. N. Rashid, and M. R. Hasan, "A systematic review on predicting PV system parameters using machine learning," *Heliyon*, 2023. DOI: [10.1016/j.heliyon.2023.e16815](#).
- [9] N. T. Rahman, A. H. Shaikat, **M. Jobayer**, and M. B. U. Antor, "Design and Implementation of Incentive-based Smart Plastic and Non-plastic Disposal System," in *BracU Institutional Repository*, 2023. DOI: [10.13140/RG.2.2.16215.28326](#).
- [10] M. S. Tahsin, **M. Jobayer**, M. B. U. Antor, M. Islam, F. F. Raisa, and M. A. H. Shaikat, "Predictive Analysis & Brief Study of Early-Stage Diabetes Using Multiple Classifier Models," in *12th Annual CCWC, IEEE*, 2022. DOI: [10.1109/CCWC54503.2022.9720736](#).

WORK EXPERIENCE

Research Assistant

Dept. of CSE, School of Data and Sciences

Nov 2024 – Present

BRAC University

- Working on the development of low-cost 3D MEMS-based stethoscope design
- Working on the generative AI-based methodologies of synthetic sound generation

Researcher and Project Manager

Biomedical Science and Engineering Research Center

May 2024 – Present

BRAC University

- Developing affordable, high-SNR-based biological EEE signal filters
- Working on multimodal signals and vision-based human pose estimation

Research Assistant

Dept. of EEE, BSRM School of Engineering

Dec 2023 – Present

BRAC University

- Working on diffusion model-based medical imaging super-resolution project
- Proposed AttDiCNN model based on Kamada-Kawai layout for auto-sleep staging

Embedded System Engineer Intern

FactoryNext

Jul 2023 – Sep 2023

Dhaka, BD

- Developed MQTT server-based factory monitoring module

- Developed system-on-chip IR signal decoder by reverse engineering

Senior Researcher

Laboratory of Space Systems Engineering & Technology

Jul 2023 – Sep 2023

BRAC University

- I was in the nano camera development team for the 3U cubesat, where I had to analyze the components' requirements and their compatibility with each other

Android Application Developer

Global Dream Pvt. Ltd.,

Dec 2019 – Jan 2022

Rajasthan, India

- Designed the whole application wireframe & UI
- Designed the API and database scheme using PHP, MSSQL, and Firebase
- Built the complete application using Java & Kotlin using Native Android SDK

RESEARCH GRANTS

The research projects I have contributed to have secured total funding of BDT 1.3 million to date.

1. Design and Development of a 3D-printed MEMS-based Stethoscope for Real-time Heart Monitoring and Cardiovascular Disease Prediction Using Machine Learning to Assist Medical Professionals

Funded by: Research Seed Grant Initiative (RSGI), BRAC University

Principal Investigator: Prof. Md. Golam Rabiul Alam

My Role: Research Assistant

Total Grant: BDT 650,000

2. Brain-computer Interface-Driven Neural Rehabilitation for Motor Dysfunction Patients with Soft Robotic Gloves

Funded by: Research Seed Grant Initiative (RSGI), BRAC University

Principal Investigator: Md. Mehedi Hasan Shawon

My Role: Co-PI

Total Grant: BDT 650,000

RELEVANT PROJECTS

Chest X-ray Abnormalities Detection Using Pre-trained Model

- We achieved an overall accuracy of 96.4% using ResNet18
- The model was trained on 15,000 images from the VinDr-CXR dataset

AWARDS AND COMPETITION

Quality Journal Publication Award

BRAC University

Awarded by Research Metrics Committee (RMC)

IEEE R10-HTC 2024 Innovation Challenge

Kuala Lumpur, Malaysia

Organized by IEEE Humanitarian Technology Conference

JAXA Kibo Robot Programming Challenge

Tokyo, Japan

3rd Kibo RPC; In collaboration with NASA

JOURNAL AND CONFERENCE PEER REVIEW

Nature Scientific Reports, Affective Artificial Intelligence (A2IICPR) 2024, IEEE EICT 2023, IET Renewable Power Generation

CONFERENCES AND SEMINARS

IEEE Computing and Communication Workshop and Conference

Jan 2022

Conference Paper Presenter

Las Vegas, NV, USA

- Presented our conference paper titled 'Predictive Analysis & Brief Study of Early-Stage Diabetes Using Multiple Classifier Models' virtually

SKILLS

EXTRA-CURRICULAR ACTIVITIES

Agami Inc

Agami Education Foundation

Oct 2021 – Dec 2022

Dhaka, BD

- The goal of this organization is to help underprivileged children have access to education
- We used to visit the affiliated schools one or two times a month and track individual student's progress

REFERENCES

1. **Dr. Saifur Rahman Sabuj**

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BRAC University
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Email: s.r.sabuj@ieee.org

2. **Dr. Md Zakir Hossain**

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3. **Md Rakibul Hasan**

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Senior Lecturer (on leave)
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