

RAKIBUL HASAN RAJIB

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Google Scholar [◇](#) Github [◇](#) LinkedIn

EDUCATION

Independent University, Bangladesh

Dhaka, Bangladesh

Bachelor of Science in Computer Science and Engineering

2019 - 2023

Minor: Robotics and Intelligent Machine

CGPA: 3.99/4.0

Thesis: **Semi-supervised semantic segmentation using invariance and equivariance via clustering**

Supervisor: [A K M Mahbubur Rahman](#)

RESEARCH INTERESTS

My research interests lie in computer vision, multimodal learning, and federated learning, with a focus on developing systems that can effectively perceive, reason, and generalize across diverse data modalities. I aim to leverage self-supervised and semi-supervised learning techniques, along with federated learning strategies, to create scalable and adaptable models for real-world applications.

RESEARCH EXPERIENCE

Center for Computational & Data Sciences, IUB || CCDS

Dhaka, Bangladesh

Research Assistant

Mar 2024 - Present

- Contributed to the development of SloMo-Fast, a dual-teacher framework for Continual Test-Time Adaptation (CTTA).
- Working on a privacy-preserving aggregation method for continual test-time adaptation in federated learning.
- Investigating strategies to capture shared and modality-specific features in multimodal learning to improve cross-modal representations and downstream task performance.
- Mentored undergraduate students in the implementation and documentation of their final thesis projects, providing guidance on technical execution and academic writing.

Center for Computational & Data Sciences, IUB || CCDS

Dhaka, Bangladesh

Undergraduate Research Assistant

Jan 2022 - July 2023

- Developed a semi-supervised semantic segmentation framework leveraging pseudo-labels generated through semi-supervised K-means clustering.

PREPRINTS

- Md Akil Raihan Iftee, Mir Sazzat Hossain, **Rakibul Hasan Rajib**, A K M Mahbubur Rahman, Tariq Iqbal, Md Mofijul Islam, Md. Ashraful Amin, and Amin Ahsan Ali. “**SloMo-Fast: Slow-Momentum and Fast-Adaptive Teachers for Source-Free Continual Test-Time Adaptation**” submitted in the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR 2025). [\[Paper\]](#) [\[Code\]](#)
- **Rakibul Hasan Rajib**, Md Akil Raihan Iftee, Mir Sazzat Hossain, A K M Mahbubur Rahman, Sajib Mistry, Md. Ashraful Amin, and Amin Ahsan Ali. “**FedCTTA: A Collaborative Approach to Continual Test-Time Adaptation in Federated Learning**” submitted in the International Joint Conference on Neural Networks (IJCNN 2025). [\[Paper\]](#) [\[Code\]](#)

STANDARDIZED TEST SCORES

Graduate Record Examination(GRE) - October 29, 2023

Quantitative	Verbal	AWA	Total
168	163	4.0	331

International English Language Testing System (IELTS) - November 27, 2023

Listening	Reading	Writing	Speaking	Overall
8.0	8.5	7.0	6.5	7.5

SELECTED PROJECTS

Face Liveness Detection System: Python, Pytorch || [Git](#)

Responsibilities: Developed a robust system to detect and distinguish live faces from spoofing attacks using machine learning and computer vision techniques. Implemented advanced image processing with OpenCV to analyze facial movements and texture patterns. Conducted extensive testing to evaluate model performance under diverse conditions, ensuring reliability across various lighting and environmental scenarios.

Real-Time Location Tracking for Trains: Kotlin, Firebase || [Git](#)

Responsibilities: Developed an Android application to track real-time train locations by collecting and synchronizing user-reported data. Utilized Firebase for real-time database management, ensuring accurate location updates and seamless data sharing among users. Implemented geofencing and route-matching algorithms to verify train-specific location data, enhancing tracking precision.

Student Performance Monitoring System: Django, JavaScript, MySQL, ChartJS || [Git](#)

Responsibilities: Built a web application to monitor and evaluate student performance within Outcome-Based Education (OBE) using the Django framework. Implemented a scalable and efficient backend to manage student data and academic outcomes. Utilized MySQL for structured data storage, ensuring efficient query handling and seamless integration with the frontend.

ACHIEVEMENTS

Vice Chancellor's Honour List for academic excellence, IUB	<i>Summer 2022</i>
Dean's Honour List for academic excellence, IUB	<i>Autumn 2021</i>
University Merit Scholarship for outstanding result on admission test, IUB	<i>Autumn 2019</i>

TECHNICAL SKILLS

Programming Languages	Python, C/C++, JAVA, MATLAB, HTML
Machine Learning Tools	Pytorch, Tensorflow, Sklearn, Pandas, Numpy
Data Management & Analytics	MySQL, PostgreSQL, MongoDB
Web & App Development	HTML, CSS, JavaScript, PHP, Bootstrap, Kotlin

REFERENCE

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Dr. A K M Mahbubur Rahman

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