

Mahmudul Hasan

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RESEARCH INTERESTS

I am an M.Sc. student in Computer Science and Engineering at the University of Dhaka and a Consultant at the ICSETEP Sub-project (UGC). Research interests include Artificial Intelligence, Deep Learning, and Natural Language Processing, with emphasis on low-resource language processing, OCR systems, and intelligent educational technologies.

EDUCATION

University of Dhaka, Dhaka, Bangladesh

M.Sc.(Thesis) in Computer Science and Engineering

Jul. 2025 – Present

Research Focus: Deep Learning, Computer Vision, NLP, Image Processing

University of Dhaka, Dhaka, Bangladesh

B.Sc. in Computer Science and Engineering

2020 – 2025

Thesis: Bangla Abstractive Summarizer with Attention-based Learning Technique for Long Articles

Government Science College, Tejgaon, Dhaka

2019

HSC, Science GPA: 5.00 / 5.00

Dhaka Eastern College, Dhaka

2017

SSC, Science GPA: 5.00 / 5.00

PROFESSIONAL EXPERIENCE

Consultant (Contractual)

Mar. 2026 – Present

ICSETEP Sub-project, University Grants Commission (UGC), University of Dhaka

- Working on the ADB-funded project: “*RAG-Driven Business Intelligence Platform Integrating Enterprise Data for Real-Time Insight, Predictive, and Prescriptive Decision Analytics.*”
- Designing scalable AI pipelines integrating enterprise databases with Retrieval-Augmented Generation (RAG).
- Supporting deployment and optimization of GPU-based compute infrastructure for large-scale data processing and AI model inference.

Research Assistant

Jan. 2023 – Dec. 2025

Cognitive Agents and Interaction Lab (CAIL), University of Dhaka

- Developed deep learning-based OCR and NLP systems for low-resource languages.
- Trained and optimized models on multi-GPU servers using PyTorch.
- Implemented mixed-precision training, gradient checkpointing, and parallel pipelines for efficient GPU utilization.
- Mentored undergraduate research students in AI systems and ML deployment.

PUBLICATIONS

Hasan et al. “*GraDeT-HTR: A Resource-Efficient Bengali Handwritten Text Recognition System Utilizing Grapheme-based Tokenizer.*” EMNLP 2025.

“*Automatic Vehicle Detection using DETR: A Transformer-Based Approach for Navigating Treacherous Roads.*” arXiv preprint, 2025.

SELECTED PROJECTS

CognifyQ – AI-based EdTech Platform 2023 – 2025

- AI system for automated question generation and semantic answer evaluation.
- Uses LLMs and deep learning models for automated grading of handwritten and textual answers.

PressWiz – News Summarization Platform 2023 – 2024

- Bilingual news summarization platform using attention-based deep learning models.

Lucent – Charity Transparency Platform 2022

- Web and Android platform for transparent charity fund tracking.
- Finalist in Therap Javafest 2022.

TECHNICAL SKILLS

Programming: Python, C/C++, Java, JavaScript

AI / ML: PyTorch, TensorFlow, HuggingFace Transformers, OpenCV, Scikit-learn, Pandas

Systems / Infrastructure: Linux, Docker, GPU Computing, Distributed Training, Redis, Celery

Web / Backend: Django, Spring Boot, ReactJS, PostgreSQL, Git

HONORS & AWARDS

Graduate Research Fellow, ICT Division, Government of Bangladesh (2026)

2nd Runners-Up, SUST DL ENIGMA 1.0 – Deep Learning Competition (2024)

National Finalist, Code Samurai Programming Contest (2022, 2024)

5th Place, Therap Javafest – National Java Programming Competition (2022)

National Winner, Bangladesh National Science Olympiad (2019)

ACADEMIC SERVICE

General Secretary, CSEDU Students' Club, University of Dhaka 2024 – 2025

- Organized contests, debates, CTF competitions, and technical workshops.
- Coordinated academic activities and industry collaboration events for 300+ students.

REFERENCES

Dr. Md Abdur Razzaque

Professor & Chairman, CSE

University of Dhaka

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Dr. Md Mosaddek Khan

Associate Professor, CSE

Assistant Proctor, University of Dhaka

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