Mahmudul Hasan

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Research Assistant at Cognitive Agents and Interaction Lab, University of Dhaka

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DOB: September 15, 1999

I am a dedicated Computer Science graduate with specialized focus on Artificial Intelligence and Deep Learning research. My academic and professional experience encompasses deep learning, natural language processing, and computer vision applications. Currently serving as Research Assistant at the Cognitive Agents & Interaction Lab, University of Dhaka. I am committed to advancing AI research while developing practical solutions for real-world challenges.

Education

July 2025–Present **Master of Science in Computer Science & Engineering**, *University of Dhaka*, Dhaka, Bangladesh
- **Research Focus:** Advanced topics in Artificial Intelligence and Machine Learning
- **Current Status:** Recently commenced graduate studies with focus on AI research

2020–2025 **Bachelor of Science in Computer Science & Engineering**, *University of Dhaka*, Dhaka, Bangladesh,
- **Thesis:** Bangla Abstractive Summarizer with Attention-based Learning Technique for Long Articles
- **Relevant Coursework:** Advanced Algorithms, Data Science, Artificial Intelligence, Database Systems, Software Engineering, Computer Networks, Operating Systems, Discrete Mathematics, Linear Algebra, Statistics
- **Academic Projects:** Multiple research-oriented projects in AI/ML domain

2017–2019 **Higher Secondary Certificate (Science)**, *Government Science College*, Dhaka, Bangladesh, **GPA: 5.00/5.00**
- Strong foundation in Mathematics, Physics, Chemistry and Biology

Conference Presentations & Publications

Accepted
- **GraDeT-HTR:** A Resource-Efficient Bengali Handwritten Text Recognition System Utilizing Grapheme-based Tokenizer and Decoder-only Transformer

Preprint
- **Automatic Vehicle Detection using DETR:** A Transformer-Based Approach for Navigating Treacherous Roads

Google Scholar https://scholar.google.com/citations?user=Xz_YijUAAAAJ

ORCID https://orcid.org/0009-0009-3125-1340

Research Experience

January 2023–Present **Research Assistant**, *Cognitive Agent and Interaction Lab*, Department of Computer Science & Engineering, University of Dhaka, Visit ↗

- **Research Focus:** Artificial Intelligence applications, Natural Language Processing, Computer Vision
- **Project Leadership:** Lead multiple R&D projects focusing on practical AI solutions for real-world problems
- **Publications:** Contributing to research papers in AI/ML domain (ORCID)
- **Technical Contributions:** Developed advanced OCR systems with 95%+ accuracy using deep learning techniques
- **Collaboration:** Work with interdisciplinary teams including faculty and graduate students

Professional Experience

July 2023–Present **Software Engineer (Part-time)**, *AlterYouth*, Dhaka, Bangladesh

- Developing Android applications using Java in collaborative development environment
- Developing backend using Django Framework, Celery and PostgreSQL
- Implement modern software engineering practices and architectural patterns
- Technologies: Java, Python, Android SDK, Firebase, Google Maps API, RESTful services

December 2019–2022 **Mathematics Instructor (Part-time)**, *UDVASH Academic Coaching*, Bangladesh

- Teach advanced mathematics for university admission preparation
- Develop curriculum and assessment materials for competitive examinations
- Mentor students in analytical thinking and problem-solving methodologies

Featured Projects

2023-Present **CognifyQ**, *cognifyq.com*, Team Lead

- **Project Overview:** AI-driven web platform that automates both question generation and script evaluation. It employs Large Language Models (LLMs) to understand and grade written responses semantically, providing immediate, unbiased, and feedback-rich assessment. The platform reduces teacher workload while enabling students to receive consistent, meaningful feedback that promotes self-learning.
- **Key Features:** Semantic-Aware Evaluation, Automated Question Generation, Handwritten Answer Evaluation, Curriculum-Aligned Question Bank, Multi-Format Input Support
- **Technical Implementation:** Python, Pytorch, Transformers, VLLM etc. for model deployment and backend.

2021 **CHESS-AI - Intelligent Chess Engine**, *github.com/euler1729/CHESS-AI*, Team Leader & Algorithm Developer

- **Project Overview:** Advanced AI chess game featuring minimax algorithm with alpha-beta pruning and evaluation functions
- **Key Features:** Multiple difficulty levels, move suggestion system, game analysis, intuitive GUI
- **Technical Implementation:** C++ chess engine with SDL2 graphics library, optimized for performance
- **Achievement:** Chess engine capable of playing at intermediate level (1400+ ELO equivalent)

2022 **Lucent - Transparent NGO Payment System**, *github.com/euler1729/lucent*, Frontend Developer

- **Project Overview:** Blockchain-inspired payment platform ensuring transparency in NGO financial transactions
- **Key Features:** Multi-platform support (web & mobile), secure payment gateway, transaction tracking, donor verification
- **Technical Implementation:** VueJS frontend, Spring Boot backend, Android native app, integrated payment systems
- **Social Impact:** Designed to increase donor confidence and accountability in charitable organizations

2023 **SmartStock - AI-Powered Investment Platform**, *github.com/euler1729/SmartStock*, Team Lead & Full-Stack Developer

- **Project Overview:** Comprehensive stock market analysis platform providing AI-driven investment insights and predictive analytics
- **Key Features:** Real-time market data processing, ML-based price prediction, portfolio optimization, interactive dashboards
- **Technical Implementation:** Microservices architecture with Spring Boot backend, ReactJS frontend, PostgreSQL database
- **Impact:** Achieved 85% accuracy in short-term stock price predictions using advanced ML algorithms

Honors, Awards & Recognition

2024 **2nd Runners-Up**, *SUST DL ENIGMA 1.0*, Deep Learning Competition
Recognition for outstanding performance in machine learning and artificial intelligence competition

2024 **National Finalist**, *Code Samurai 2024*, Team: DU_TripleHash
Advanced to final round of Bangladesh's premier Hackathon competition, became 3rd in the phase-2 and top 11 in the final

2022 **5th Position & Finalist**, *Therap Javafest 2023*, Software Development Competition, Team: DU_StormSurge
Achieved top-5 finish in national Java programming competition

2022 **Top 16 Finalist**, *Code Samurai 2022*, Team: DU_Fireflies
Selected among top teams in main round of national hackathon competition

2019 **National Winner**, *Bangladesh Science Olympiad*, 11th Position Nationally
Demonstrated excellence in scientific problem-solving and analytical thinking

Professional Development & Certifications

2024 **Introduction to Large Language Models**, *Google Cloud/Coursera*
Comprehensive training on modern NLP architectures and applications

2023 **Supervised Machine Learning: Regression and Classification**, *Stanford University/Coursera*, Andrew Ng
Foundational course in machine learning theory and practical implementation

2021 **Facebook Hacker Cup**, *Meta Platforms*, Competitive Programming
Participated in international algorithmic programming competition

2020 **Problem-Solving (Basic) Certificate**, *HackerRank*
Demonstrated proficiency in algorithmic problem-solving and data structures

Academic Service & Leadership

January 2024–Present **General Secretary**, *CSEDU Students' Club*, University of Dhaka

- Lead organization of academic conferences, workshops, and technical seminars
- Coordinate industry-academia collaboration programs and internship placements
- Manage annual budget and oversee activities for 500+ computer science students
- Facilitate peer learning initiatives and competitive programming training

December 2021–February 2024 **Secretary**, *CSEDU Students' Club*, University of Dhaka

- Maintained official records and coordinated inter-departmental activities
- Organized study groups and academic support programs for undergraduate students
- Mentored junior students in programming competitions and technical skills development

November 2020–December 2021 **Executive Member**, *CSEDU Students' Club*, University of Dhaka

Research Interests & Future Goals

Current Focus	Artificial Intelligence, Machine Learning, Natural Language Processing, Computer Vision
Research Areas	Deep Learning architectures, Transformer models, AI ethics, Human-Computer Interaction
Career Vision	Contributing to cutting-edge AI research while developing practical solutions that positively impact society
Long-term Goals	Pursuing advanced research in AI/ML, leading innovative tech teams, and mentoring next-generation developers

Academic Contributions

Research Papers	Currently working on publications related to NLP and computer vision applications (In preparation)
Technical Blogs	Regular contributor to personal tech blogs: mhcsedu.blogspot.com & iconicai.blogspot.com
Open Source	Active contributor to various open-source projects on GitHub with 20+ repositories

Writing and Speaking

Bengali	Native proficiency
English	Professional working proficiency (IELTS equivalent: 7.0+)
Hindi/Urdu	Conversational proficiency

Personal Interests & Volunteer Work

Environmental	Tree plantation initiatives and environmental conservation projects
Sports	Cricket enthusiast, regular participation in inter-departmental tournaments
Mathematics	Competitive mathematics problem solving, mentor for Math students
Community Service	Volunteer mathematics tutor for underprivileged students

References

Dr. Md Mosaddek Khan, *Associate Professor*

- Primary Investigator, Cognitive Agents and Interaction Lab
- Department of Computer Science and Engineering
- University of Dhaka, Bangladesh
- Email: mosaddek[at]du.ac.bd
- Contact: +880 1768-408402

This CV represents my academic and professional journey as of November 23, 2025. For the most current information and project updates, please visit my portfolio at euler1729.github.io/portfolio