A. F. M. Minhazur Rahman

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About

I am a Computer Science and Engineering (CSE) graduate from Rajshahi University of Engineering & Technology (RUET), Bangladesh, where I earned a Bachelor of Science degree with first-class honors, ranking first in my class. Currently, I serve as an Assistant Professor at the same institution. My research focuses on deep learning, particularly in computer vision tasks, including segmentation and classification. I am currently pursuing a Master of Science degree in CSE at RUET, where my thesis involves deep learning-based image segmentation for medical image analysis. I am passionate about contributing to advancements in computer vision, a field that I believe will significantly shape the future.

Research Interests

Computer Vision, Deep Learning, Artificial Intelligence, Medical Image Analysis

Education

Master of Science | ***Computer Science & Engineering (CSE)*** — On-going
Rajshahi University of Engineering & Technology (RUET) — Rajshahi, Bangladesh
CGPA: 4.00/4.00

- **Relevant coursework**: Machine Learning, Advanced Digital Image Processing, Advanced Artificial Intelligence, Data Mining
- **Thesis title:** An Effective Deep Learning Approach for Analysis of Abnormalities in MRI Images
- **Thesis supervisor:** Dr. Md. Ali Hossain, Professor, CSE, RUET

Bachelor of Science | ***Computer Science & Engineering (CSE)*** — 2021
Rajshahi University of Engineering & Technology (RUET) — Rajshahi, Bangladesh
CGPA: 3.89/4.00, Department Position: 1st

- **Relevant coursework**: Digital Image Processing, Digital Signal Processing, Neural Networks & Fuzzy Logic, Artificial Intelligence, Technical Writing & Presentation, Vector Analysis & Linear Algebra, Object Oriented Programming, Applied Statistics, Data Structure, Computer Algorithms
- **Thesis title:** Hyperspectral Image Classification Using Factor Analysis and Convolutional Neural Networks
- **Thesis supervisor:** Dr. Boshir Ahmed, Professor, CSE, RUET

Work Experience

Rajshahi University of Engineering & Technology — Rajshahi, Bangladesh
Assistant Professor, Department of Computer Science & Engineering — September 2024 – Present
Lecturer, Department of Computer Science & Engineering — December 2021 – September 2024

- Supervised 10 undergraduate students in their theses on deep learning, computer vision, and image analysis, providing guidance on research methodologies and project execution
- **Courses taught:** Algorithm Analysis & Design, Applied Statistics, Technical Writing & Presentation, Operating Systems, Parallel & Distributed Systems

North Bengal International University — Rajshahi, Bangladesh
Lecturer — March 2021 – December 2021

- Supervised undergraduate students in their software development projects
- **Courses taught:** Object Oriented Programming with Java, Computer Architecture & Organization

Selected Publications

Published Book Chapters

- **A. F. M. Minhazur Rahman** and Boshir Ahmed. "Hyperspectral Image Classification Using Factor Analysis and Convolutional Neural Networks." In Mohammad Shamsul Arefin, M. Shamim Kaiser, Anirban Bandyopadhyay, Md. Atiqur Rahman Ahad, and Kanad Ray, editors, *Proceedings of the International Conference on Big Data, IoT, and Machine Learning*, pages 129–139, Singapore, 2022. Springer Singapore.

Accepted Book Chapters

- **A. F. M. Minhazur Rahman** and Md. Ali Hossain. "Ensemble-Based Transfer Learning Approach for Brain Tumor Segmentation from MRI Images." *Accepted and presented at the International Conference on Big Data, IoT, and Machine Learning: BIM 2023. Currently under editing for publication in a Taylor & Francis book.*

Published Conference Papers

- **A. F. M. Minhazur Rahman** and Md. Ali Hossain. "Attention-refined U-Net with Skip Connections for Effective Brain Tumor Segmentation from MRI images." In *2023 26th International Conference on Computer and Information Technology (ICCIT)*, pages 1–6, 2023.
- Kowshik Deb Nath, **A. F. M. Minhazur Rahman**, and Md. Ali Hossain. "An Attention-based Deep Learning Approach to Knee Injury Classification from MRI Images." In *2023 26th International Conference on Computer and Information Technology (ICCIT)*, pages 1–6, 2023.

Accepted Conference Papers

- Sunayana Ghosh, **A. F. M. Minhazur Rahman**, Plabon Talukder, Md. Ali Hossain and Azmain Yakin Srizon. "A Multimodal Approach to Bengali Music Genre Classification Using 1D CNN and ResNet-50." *Accepted and presented at the 27th International Conference on Computer and Information Technology (ICCIT), 2024.*
- Noman Amin, Anwar Hossain Efat, **A. F. M. Minhazur Rahman** and S. M. Mahedy Hasan. "Enhanced Skin Lesion Detection Using Concatenated DenseNet and Multi-Attention Mechanisms." *Accepted and presented at the 4th International Conference on Innovations in Science, Engineering and Technology (ICISET)*, 2024. **(Best Paper Award Winner)**

Research Projects

Brain Tumor Segmentation Using Effective Deep Learning Approach 2022-23
Project Director

- A research project funded by the University Grants Commission (UGC), Bangladesh, and RUET.
- Research grant amount: 149,760 BDT
- Proposed a novel, efficient deep learning based model for semantic segmentation of brain tumors in MRI images

Software Development Projects

Attendance Manager | ***Java***
An Android application for taking class attendance, keeping track of students and generating attendance reports
Available on Github: Link

Med Organizer | ***Java***
An Android application for keeping track of medication, setting reminders, keeping doctor appointment notes, etc
Available on Github: Link

C-Like Compiler | ***C, Flex, Bison***
Compiler for a programming language similar to C that generates MIPS assembly code
Available on Github: Link

ACHIEVEMENTS

Student of the Year - 4th Year
Awarded for outstanding result in 4th year with average 3.97 GPA and academic excellence

Student of the Year - 3rd Year
Awarded for outstanding result in 3rd year with average 3.93 GPA and academic excellence

Student of the Year - 1st Year
Awarded for outstanding result in 1st year with average 3.94 GPA and academic excellence

Board Scholarship, Higher Secondary Certificate (HSC)
Recipient of the Rajshahi Board Scholarship for general grade performance

SKILLS

- **Technical Skills**
  - **Deep Learning Libraries**: TensorFlow, Keras, PyTorch
  - **Data Analysis Tools**: NumPy, Pandas, Matplotlib, Seaborn
  - **Programming Languages**: Python (advanced), C++ (intermediate), Java (advanced)
  - **Software Development**: Android, PHP-Laravel, MySQL, Docker, Git
- **Language Proficiency**
  - **English:** Professional (**IELTS: 8.0** – Listening: 8.5, Reading: 7.5, Writing: 8.0, Speaking: 7.0)
  - **Bengali:** Native

REFERENCES

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  Rajshahi University of Engineering & Technology
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