# A K Z Rasel Rahman

Khulna, Bangladesh

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## Objective

I am a dedicated and motivated individual pursuing advanced studies in Computer Science and Engineering. Passionate about research and problem-solving, I am persistent in overcoming challenges and committed to achieving my academic and professional goals.

## Education

### M.Sc. Eng. in Computer Science & Engineering

**Khulna University** — **Khulna, Bangladesh** — *2024*

- **CGPA:** 3.92/4.00
- **Thesis:** Feature Analysis and Classification of Lung and Colon Cancer Images using Advanced Machine Learning Techniques

### B.Sc. Eng. in Computer Science & Engineering

**Khulna University** — **Khulna, Bangladesh** — *2022*

- **CGPA:** 3.62/4.00
- **Thesis:** UAV Assisted Forest Fire Detectio nUsing Deep Convolutional NeuralNetwork

### Higher Secondary Certificate (HSC)

**Collectorate School and College** — **Rangpur, Bangladesh** — *2016*

- **GPA:** 5.00/5.00 (A+)
- **Group:** Science

### Secondary School Certificate (SSC)

**Jaldhaka Pilot High School** — **Nilphamari, Bangladesh** — *2014*

- **GPA:** 5.00/5.00 (A+)
- **Group:** Science

## Research Interests

- Machine Learning and Computer Vision for Video and Image Analysis
- Real-Time Activity Recognition and Anomaly Detection in Video Streams
- Exploring Transfer Learning and Foundation Models for Behavior Analysis
- Multimodal Data Integration for Comprehensive Video Understanding
- Resource-Efficient AI Models for Low-Power and Edge-Based Applications
- Ensuring Ethical AI Practices in Surveillance and Medical Applications

## Publications

[1] A. K. Z. Rasel *et al.*, "Focusing on subtleties: Class-specific attention-based deep learning for precise diagnosis of lung and colon cancers," in *Proceedings of the International Conference on Machine Intelligence and Emerging Technologies (MIET 2024)*, Accepted, to appear in Lecture Notes in Networks and Systems (LNNS), Noakhali, Bangladesh, 2024.

[2] P. Halder, M. M. Hassan, A. R. Rahman, L. Akter, A. S. Ahmed, S. Khan, S. Chatterjee, and M. Raihan, "Prospects and setbacks for migrating towards 5g wireless access in developing bangladesh: A comparative study," *The Journal of Engineering*, vol. 2023, no. 10, e12319, 2023.

[3]  A. Rahman, S. Sakif, N. Sikder, M. Masud, H. Aljuaid, and A. K. Bairagi, "Unmanned aerial vehicle assisted forest fire detection using deep convolutional neural network," *Intelligent Automation & Soft Computing*, vol. 35, no. 3, pp. 3259–3277, 2023.

[4]  A. Akther, M. S. Islam, H. Sultana, A. R. Rahman, S. Saha, K. M. Alam, and R. Debnath, "Compilation, analysis and application of a comprehensive bangla corpus kumono," *IEEE Access*, vol. 10, pp. 79 999–80 014, 2022.

## Ongoing Research

am currently working on the project *"Feature Analysis and Classification of Lung and Colon Cancer Images using Advanced Machine Learning Techniques"* under the supervision of Professor Dr. Anupam Kumar Bairagi. This research explores the use of Multi-Head Attention-based CNNs (MHAB-CNN) to enhance feature extraction and classification performance. The results are being prepared for submission to a reputable journal.

As part of my M.Sc. work, I also published a paper titled *"Focusing on Subtleties: Class-Specific Attention-Based Deep Learning for Precise Diagnosis of Lung and Colon Cancers"*, presented at the International Conference on Machine Intelligence and Emerging Technologies (MIET 2024). The paper, published in *Lecture Notes in Networks and Systems (LNNS)* [1], will soon be available online.

## Projects

- A Database Project on Library Management System
- Web application on Khulna University Automation Project (Digital University) [Library Management Section]
- Simple and Complex Differential Calculus Problem Solver (Step by Step)
- Generation of Dual-Axis Sun Tracking Solar Panel

## Awards & Achievements

- University Merit Scholarship
- ICT Fellowship

## Skills

- **Programming Languages**: Assembly Language, C, C++, Java, Arduino, Python, Matlab
- **MS-Office**: Word, Excel, PowerPoint, Visio
- **Presentation Software**: Microsoft PowerPoint
- **Developer Tools**: Git, VS Code, Adobe Illustrator, Spyder, Anaconda, Jupyter Notebook, Visual Studio

## Work Experience

**North Western University**                                                                 **Khulna, Bangladesh**
*Lecturer*                                                                                              *2023–Present*
- Teach undergraduate courses in Computer Science and Engineering, including Introduction to Programming and Data Structures.
- Develop and deliver lectures, conduct lab sessions, and supervise student projects.
- Engage in research activities related to machine learning and computer vision.

**North Western University**                                                                 **Khulna, Bangladesh**
*Adjunct Lecturer*                                                                                         *2022–2023*
- Assisted in teaching core courses in Computer Science and Engineering.
- Conducted tutorials and helped students with lab exercises and assignments.

## Undergraduate Research Supervision

I am currently supervising undergraduate students on projects involving machine learning and deep learning techniques. The projects cover a variety of applications within these fields, where I assist students with project design, data analysis, and model development.

# References

○ **Dr. Anupam Kumar Bairagi**
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Khulna University, Khulna, Bangladesh.
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○ **Dr. Kazi Masudul Alam**
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