

# Musfequa Rahman

✉ musfequa@cvasu.ac.bd  
in linkedin.com/in/musfequa-rahman-    github.com/MusfequaRahman  
🌐 MusfequaRahman.github.io    🎓 Google Scholar

## Education

<b>Chittagong University of Engineering and Technology (CUET)</b> <i>M.Sc. in Computer Science and Engineering</i> GPA: 3.75 (with Honors) / 4.00 Awards: <b>Dean's Award</b>	<b>Chattogram, Bangladesh</b> <i>Jul 2023 – June 2025</i>
<b>Chittagong University of Engineering and Technology (CUET)</b> <i>B.Sc. in Computer Science and Engineering</i> GPA: 3.91 (with Honors) / 4.00 Merit Position: 3 <sup>rd</sup> / 130 Awards: <b>University Merit Scholarship, Dean's Award</b>	<b>Chattogram, Bangladesh</b> <i>Jan 2018 – Jul 2023</i>

## Research Interests

Advancing **Agentic AI**, **Large Language Models**, and **Multimodal Reasoning** with a focus on robustness, fairness, and interpretability. My work in **Multimodal Humor and Sarcasm Detection** within **Human-Computer Interaction** informs explorations of **Vision-Language Integration**, **Human-Centered NLP**, and **Trustworthy AI** for transformative applications in biomedical imaging, smart surveillance, and conversational intelligence.

## Professional Experience

<b>Present</b> <b>Jul 2024</b>	<b>Lecturer - Dept. of Computer Science &amp; Engineering, CVASU</b> Delivered undergraduate courses: Basic Electrical Engineering, Computer Science. MSc courses: Automation and Intelligent Systems for Food Engineering and Machine Learning. Supervised two undergraduate theses on <i>Review of Nutritional Deficiencies</i> and <i>Cardio Vascular Disease</i> . Co-supervisor of an MSc student working on <i>Thin Film Growth</i> .	<b>Chattogram, Bangladesh</b>
<b>Present</b> <b>Oct 2024</b>	<b>Adjunct Lecturer - East Delta University</b> Teaching undergraduate and MSc courses on: Neural Networks and Fuzzy Systems, Algorithm-I, Cryptography and Network Security.	<b>Chattogram, Bangladesh</b>
<b>Jun 2024</b> <b>Jan 2024</b>	<b>Lecturer - University of Asia Pacific</b> Teaching undergraduate courses on: Competitive Programming, Data Structures and Algorithms, Algorithm-II, Object-Oriented Programming.	<b>Dhaka, Bangladesh</b>
<b>Dec 2023</b> <b>Jul 2023</b>	<b>Lecturer - Uttara University</b> Teaching undergraduate courses on: Computer Networks, Data Structures, Object-Oriented Programming, Structured Programming.	<b>Dhaka, Bangladesh</b>

## Research Projects / Grants

<i>Artificial Food Colorants in Processed Foods: A Machine Learning Study on Perception and Health Risks</i> <b>Principal Investigator</b>	<i>July 2024 – June 2025</i>
<ul style="list-style-type: none"><li>Funded by the University Grants Commission (UGC) via Research and Extension, CVASU.</li><li>Implemented by the Dept. of Physical and Mathematical Sciences, CVASU.</li></ul>	
<i>Quality Evaluation of Commonly Consumed Processed Food in Chattogram and Risk Assessment</i> <b>Investigator</b>	<i>July 2024 – June 2025</i>
<ul style="list-style-type: none"><li>Funded by the University Grants Commission (UGC) via Research and Extension, CVASU.</li><li>Implemented by the Faculty of Food Science and Technology, CVASU.</li></ul>	

## Notable Publications

(S=In Submission, J=Journal, C=Conference, B=Book Chapter)

[J.3] DeepGuard: Enhancing Violence Detection in Smart Cities through Deep Learning.  
M.A.M. Provath, **Musfequa Rahman**, K. Deb, P.K. Dhar, T. Shimamura  
*IEEE Access*, 2025

[IEEE ACCESS]

[J.2] CAMFusion: Context-Aware Multi-Modal Fusion Framework for Detecting Sarcasm and Humor Integrating Video and Textual Cues.  
**Musfequa Rahman**, M.A.M. Provath, K. Deb, P.K. Dhar, T. Shimamura  
*IEEE Access*, 2025 [IEEE ACCESS]

[J.1] ADBNet: an attention-guided deep broad convolutional neural network for the classification of breast cancer histopathology images.  
**Musfequa Rahman**, K. Deb, P.K. Dhar, T. Shimamura  
*IEEE Access*, 2024 [IEEE ACCESS]

[S.1] CricActionNet: A Comprehensive Framework for Cricket Action Recognition Using Keyframe Extraction and DenseNet-Transformer Based Architecture.  
 TM Mitul, **Musfequa Rahman**, K. Deb  
*Engineering Science and Technology, an International Journal*, 2025 [JESTECH]

[B.1] Classifying Breast Cancer Using Deep Convolutional Neural Network Method.  
**Musfequa Rahman**, K. Deb, K.H. Jo  
*International Workshop on Frontiers of Computer Vision*, 2023 [IWFCV'23]

[C.5] CounterfeitFace: A Convolution Neural Network Approach to Face Spoof Detection.  
 S Tahmina, **Musfequa Rahman**, S.M.M. Hossain, K. Deb  
*27th International Conference on Computer and Information Technology*, 2024 [ICCIT'24]

[C.4] A Deep Learning Based Approach for the Categorization of Actions in Cricket Videos.  
 TM Mitul, **Musfequa Rahman**, K. Deb  
*2nd International Conference on Information and Communication Technology*, 2024 [ICICT'24]

[C.3] Efficient Bangla Multimodal Humor Detection with Lightweight Dictionary-Based Transformations.  
**Musfequa Rahman**, M.A.M. Provath, K. Deb  
*3rd International Conference on Mathematical Analysis and Applications*, 2024. [ICMAAM'24]

[C.2] Smart Surveillance: Real-Time Violence Detection Using Deep Learning.  
 M.A.M. Provath, **Musfequa Rahman**, K. Deb  
*3rd International Conference on Mathematical Analysis and Applications*, 2024. [ICMAAM'24]

[C.1] Digital Image Watermarking using Catalan Transform and Singular Value Decomposition.  
 F.H. Saikat, M.A.M. Provath, **Musfequa Rahman**, K. Deb  
*3rd International Conference on Mathematical Analysis and Applications*, 2024. [ICMAAM'24]

## Selective Projects

### Awards and Achievements

Dean's Award, Chittagong University of Engineering and Technology (CUET)	2025
Dean's Award, Chittagong University of Engineering and Technology (CUET)	2023
University Merit Scholarship, Chittagong University of Engineering and Technology (CUET)	2019 - 2023

### Cocurricular & Leadership Activities

Strategic Planning Committee, FST, CVASU, Member	April 2025–Present
17th International Annual Scientific Conference, CVASU, Organizing Committee	October 2025
International Conference on Data Science, AI and Applications, Reviewer	June 2025
CUET Computer Club, Assistant Finance Manager	2022
New Technology Systems Ltd. (NTS) Internship, Team Leader	2022
National High School Programming Contest, Volunteer	2021
International Collegiate Programming Contest Regional, Team Leader	2020 - 2021
National Girls' Programming Contest, Bangladesh, Team Leader	2019 - 2021

### Skills

- **Languages:** Python, Java, C, C++
- **Technologies:** PyTorch, TensorFlow, Keras, Django, SQL
- **Machine Learning:** Deep Learning, Computer Vision, GANs, Biomedical Image Analysis, LLM reasoning, Multimodal Learning

- **Data Science:** Pandas, NumPy, scikit-learn, Data Visualization
- **Tools:** Git, Linux, Weights & Biases, LaTeX

## Online Courses

---

- Deep Learning Specialization — *Coursera*
- AI For Everyone — *Coursera*
- Python Data Structures — *Coursera*
- Programming for Everybody (Getting Started with Python) — *Coursera*

## References

---

**Dr. Kaushik Deb**, Professor, Dept. of CSE, CUET (debkaushik99@cueta.ac.bd)

**Dr. Mohammad Shamsul Arefin**, Professor, Dept. of CSE, CUET (sarefin@cueta.ac.bd)