Md. Masum Mia

Rajshahi, Bangladesh

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About Me

Md. Masum Mia is a final-year BSc student in Computer Science and Engineering at Rajshahi University of Engineering and Technology, specializing in computer vision with a focus on medical image analysis. His research interests include improving diagnostic tools through AI, covering image recognition and segmentation. He is passionate about the advancement of AI-driven systems and has contributed to several research projects and publications.

Research Interests

- **Computer Vision and Pattern Recognition**
- **Efficient and equitable models for resource-limited settings**
- **Multimodal fusion of images and text**
- **Explainable AI, Model Interpretability, and Topic Modeling**

Publications

Conference Papers

[C1] **Mia, M.M.**, Efat, A.H., Hasan, S.M., Hossain, M.R., Faruk, M.F., Srizon, M.A.Y. and Al Mamun, M., 2024, October. *Exploring Augmentation Strategies for Balanced Skin Lesion Classification: An Explainable Lightly Tuned DenseNet 169 Architecture*. In 2024 International Conference on Innovations in Science, Engineering and Technology (ICISET) (pp. 1-6). IEEE. **[Code, Methodology, Result Analysis]**

[C2] **Mia, M.M.**, Toufiq, R., Islam, M. Z., 2025, April. **Multi-Scale Channel Attention with Dual Pooling and Dual Blocks for Gastrointestinal Abnormality Recognition in Endoscopic Images**. *Manuscript submitted for publication in 2025 International International Conference on Next-Generation Computing, IoT and Machine Learning (NCIM)*. **[Idea, Code, Methodology, Result Analysis]**

Education

- **Rajshahi University of Engineering & Technology (RUET)**   *Feb 2020 – Jun 2025*
  BSc in Computer Science & Engineering   Rajshahi, Bangladesh
  - GPA: 3.79/4.00 (up to 7th semester)
  - Vice Chancellor's List honoree for academic excellence (2022–2024).

- **Notre Dame College**   *Jun 2017 – Apr 2019*
  Higher Secondary Certificate   Dhaka, Bangladesh
  - Grade: 5.00/5.00
  - Awarded a certificate for 100% attendance.

- **Safiuddin Sarker Academy & College**   *Jan 2015 – Mar 2017*
  Secondary School Certificate   Gazipur, Bangladesh
  - GPA: 5.00/5.00
  - Telentpool Scholarship awardee; ranked first in Gazipur district.

Experience

- **Remotasks** 🔗   *Jun 2023 - Present*
  AI Trainer & Reviewer (Coding and Mathematics Contributor & Quality Control)   Remote, USA
  - Contributed to dataset creation and refined AI model outputs in coding and mathematics.
  - Performed rigorous quality control on AI-generated content for accuracy.
  - Promoted to a reviewer position in recognition of high-quality contributions.

- **Hirable** 🔗   *Aug 2022 - Nov 2022*
  Intern - Full Stack Developer   Remote, India

- Developed authentication systems and user dashboards to enhance user experience.
- Implemented backend APIs to streamline data processing and integration.
- Collaborated with the design team to optimize the user interface for improved usability.

Projects

- **Balanced Skin Lesion Classification with Explainable LTD Architecture** *2024*
  Python, TensorFlow, Keras, Grad-CAM, Data Augmentation, Transfer Learning [⊕]

  - Developed an automated skin lesion classification system using a Lightly Tuned DenseNet169 (LTD) architecture with custom convolutional blocks.
  - Implemented Prior Augmentation to address dataset imbalance, reducing bias toward the majority class and improving generalization.
  - Achieved 98.42% accuracy on the ISIC 2020 dataset and enhanced model explainability through Grad-CAM visualizations.

- **Gastrointestinal Abnormality Classification using Lightweight MSCA Architecture** *2025*
  Python, PyTorch, MobileNet-v2, Attention Mechanisms, Grad-CAM, Transfer Learning [⊕]

  - Designed a lightweight MobileNet-v2 model with Dual-Pool Dual Block Multi-Scale Channel Attention (MSCA) to classify GI abnormalities in endoscopic images.
  - Achieved 93.84% accuracy on the Kvasir-v2 dataset using only 6.95M parameters, outperforming several heavier models and ensemble techniques.
  - Enhanced model interpretability using Grad-CAM and channel-wise visualizations, aiding in identifying diagnostically significant regions.

Technical Skills

Programming Languages: Python, C, C++, JavaScript
Database & Web Technologies: MySQL, MongoDB, ReactJs, NodeJs, Redux, REST APIs
Data Science & ML: PyTorch, Scikit-learn, Transformers, Keras, Pandas, NumPy, Matplotlib, Seaborn

Honors and Awards

- **Vice Chancellor's List Honoree for Academic Excellence** *2022–2024*
  Rajshahi University of Engineering & Technology [⊕]

  - Recognized for consistently outstanding academic performance, maintaining a top-tier GPA throughout the undergraduate program.

- **Perfect Attendance Award** *2019*
  Notre Dame College, Dhaka [⊕]

  - Demonstrated commitment and responsibility by maintaining 100% attendance throughout the academic year.

Volunteer Experience

- **Social Worker** *2024 – Present*
  BD Clean Rajshahi [⊕]

  - Raised awareness on environmental conservation, cleanliness, and waste management.
  - Participated in community events to promote health and hygiene practices.

- **AI Research Mentor** *2023 – Present*
  University Research Community [⊕]

  - Mentored students in AI, ML, and data analysis, organizing knowledge-sharing sessions.

Certifications

- **Conference Paper Presentation (ICISET)** *2024*
  International Islamic University Chittagong

- **Participation in RUET Jam 2019** *2019*
  Rajshahi University of Engineering & Technology

Language Proficiency

Bengali: Native (Speaking, Listening, Reading, Writing)
English: Intermediate (Speaking: Intermediate, Listening: Intermediate, Reading: Upper-Intermediate, Writing: Intermediate)

Hobbies and Interests

Table tennis, Cricket, Traveling, Carrom, Watching adventure and thriller movies

References

1. **Rizoan Toufiq**
   Associate Professor
   Department of Computer Science and Engineering, RUET
   Email: rizoantoufiq@yahoo.com
   Relationship: Research Supervisor

2. **Md. Farukuzzaman Faruk**
   Assistant Professor
   Department of Computer Science and Engineering, RUET
   Email: faruk@cse.ruet.ac.bd
   Relationship: Undergraduate Thesis Supervisor

3. **S. M. Mahedy Hasan**
   Assistant Professor
   Department of Computer Science and Engineering, RUET
   Email: mahedy@cse.ruet.ac.bd
   Relationship: Research Supervisor