

Ananta Raha

M.Sc. (Eng.) Student, Department of Computer Science and Engineering, BUET

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RESEARCH INTERESTS

Computer Vision – Medical Imaging – Neural Network Security – Multimodal Learning – Explainable AI

EDUCATION

- **M.Sc. in Computer Science and Engineering** 2024–Present
Bangladesh University of Engineering and Technology Expected completion: April 2026
Thesis in progress (Advisor: Dr. Sadia Sharmin, Associate Professor, Department of CSE, BUET)
- **B.Sc. in Computer Science & Engineering** 2018–2023
Rajshahi University of Engineering & Technology Rajshahi, Bangladesh
CGPA **3.54** (Out of 4.00) | CGPA of Last Two Years of Graduation: **3.71**
Thesis: Automated Detection and Segmentation of Brain Tumor Using Low-Complex RCNN and Modified UNet

PUBLICATIONS

- **Raha, A.** Lightweight COVID-19 Detection from Chest CT-Scans Using Attention-Based CNN. *SN Computer Science*, Vol. 6, 853 (2025). [DOI: 10.1007/s42979-025-04403-5](#)
- **Raha, A.**, & Tasnim, Q. S. (2025). Efficient mulberry leaf disease detection in Bangladesh: A lightweight approach for real-time applications. In *2025 Int. Conf. on Electrical, Computer and Communication Engineering (ECCE)*, Chittagong, Bangladesh, pp. 1–6. IEEE. [DOI: 10.1109/ECCE64574.2025.11013948](#)
- **Raha, A.**, Parvin, F., Jannat, T. (2024). Brain Tumor Segmentation with Efficient and Low-Complex Architecture Using RCNN and Modified U-Net. In *Lecture Notes in Networks and Systems*, vol 867. Springer, Singapore. [DOI: 10.1007/978-981-99-8937-9_22](#)
- **Raha, A.**, Ahmed, J., Hossain, M.S., Majumdar, S. (2025) Defending Model Inversion Attack Using an Improved Filter-Based Approach. (**Accepted**, 18th Intl. Symp. on Foundations & Practice of Security–Brest, France)
- Datta, S., **Raha, A.**, Sharmin, S. (2025) The Body’s Whisper: A Privacy-Preserving, Reason-Aligned Micro-Break Assistant for Remote Workers. (**Accepted**, 28th Intl. Conf. on Human-Computer Interaction–Montreal, Canada)

RESEARCH PROJECTS

- Defending Model Inversion Attack Using an Improved Filter-Based Approach 2025
Academic; *Model Privacy*—[source](#); Effectively prevents MI attacks without altering or re-training cloud models.
- Resolving Ambiguity in Multi-Mapping Reads Using Context-Aware Deep Neural Networks 2025
Academic; *Computational Biology*—[source](#); Misalignment reduced by **48.98%** (*E. coli*) and **63.16%** (*B. subtilis*)
- Gamification in E-Learning: An HCI-Focused Study on Bangladeshi University Students 2025
Academic; *Human-Computer Interaction*; Surveyed among **209** students to narrow down gamified features.
- Deep Learning Based Fully Automated Malaria Diagnosis from Full-Slide Blood Smears 2024
Academic; *Medical Imaging*—[source](#); Localized CHT-based cell extraction to fully-automate classification.
- Ultra-lightweight Approach for Efficient Mulberry Leaf Disease Detection in Bangladesh 2024
Academic; *Computer Vision, Precision Agriculture, XAI*—[source](#); Scores **>98.50%** with only **145K** parameters.
- Lightweight COVID-19 Detection from Chest CT-Scans Using Attention-Based CNN 2023
Individual; *Medical Imaging*; **≈0.25s** inference time without GPU, yet outperforms existing SOTA models.
- Efficient Sericulture Using IoT and Machine Learning 2022
Academic; *Precision Agriculture, IoT*; Automates sericulture in a cost-effective, regional approach.

LANGUAGES

Native: Bengali | Proficient (C1) in English, **IELTS Score: 7.0** (L: 7, R: 7, W: 6.5, S: 6.5)

June 2025

TECHNICAL SKILLS

- Research Experience in Machine Learning & Computer Vision (**OpenCV**, **TensorFlow**, **PyTorch**, NumPy, Pandas, Scikit-learn etc.)
- Proficient with **LaTeX**, Microsoft Word, Excel, PowerPoint, and related software
- Mobile Application Development: **Over 7 years** of experience, using Java and Android Studio
- Practical Experience in Robotics and IoT (Internet of Things); programming Arduino, ESP32, etc.
- Programming Languages: C/C++, Java, Python, JavaScript, Assembly
- Web Development & Scraping with BeautifulSoup4, Django, React.js, Tailwind CSS, Bootstrap, jQuery
- Fast touch typing with 90 words per minute

OTHER PROJECTS

- MyMoney—Personal Finance Management; Android, [Live on Google Play Store](#), 1M+ installs 2019–Present
- MorseBuddy—Decode Morse Code from Blinking Light Signals, Android app—[source](#) 2022
- Shopkeeper—Grocery Shop Management, Academic project—[GitHub](#) 2021

AWARDS

- **Fellowship—BUET MSc (April 2024)** in recognition of academic excellence; one of the three master's students awarded in October 2024 semester; stipend for 3 consecutive semesters.
- **Education Board Scholarship—Government of Bangladesh** for academic excellence in the HSC (2017), SSC (2015) and JSC (2012) Examinations, respectively.
- Participant and Finalist—National Science Olympiad, Dhaka (2014); secured 34th nation-wide.

CERTIFICATIONS AND CONFERENCES

- 18th Int. Symp. on Foundations & Practice of Security (FPS – 2025)
Presented “Defending Model Inversion Attack Using an Improved Filter-Based Approach” November 2025
Brest, France
- 2025 Int. Conf. on Electrical, Computer and Communication Engineering
Presented research “Efficient Mulberry Leaf Disease Detection in Bangladesh” February 2025
CUET, Bangladesh
- 2nd Int. Conf. on Big Data, IoT and Machine Learning
Presented research “Brain Tumor Seg. with Efficient and Low-Complex Architecture” September 2023
Dhaka, Bangladesh
- Regular Expressions in Python—Coursera; Certificate: [link](#) 2022
- Specialization: Python for Everybody—University of Michigan; Certificate: [link](#) 2020

REFERENCES

- Dr. Md. Shohrab Hossain
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- Farjana Parvin
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