

Md. Ashraful Hossen Akash

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RESEARCH INTERESTS

Computer Vision, Large Language Model, Natural Language Processing.

EDUCATION

B.Sc. in Computer Science & Engineering

Mar 2022 - July 2026

Rajshahi University of Engineering & Technology

Result (CGPA): 3.17/4.00 (3.61 in last 3 semesters)

PUBLICATIONS

- **Md. Ashraful Hossen Akash**, Shyla Afroge, Md. Asif Sajeed, Md Barkullah, Abul Khayer. “An Explainable Deep Learning Framework for Multi-Class Alzheimer’s Diagnosis with Multi-Scale CNN.” (Accepted)
2nd Conf. on Quantum Photonics, Artificial Intelligence, and Networking (QPAIN 2026). [[ResearchGate](#)]
- Md. Asif Sajeed, Shyla Afroge, **Md. Ashraful Hossen Akash**, Abul Khayer, Abdullah Al Mamun. “Memory-Efficient Deep Learning Architectures for Water Body Segmentation in Satellite Imagery: A Comparative Analysis and Ensemble.”
28th International Conference on Computer and Information Technology (ICCIT 2025).
DOI: [10.1109/ICCIT68739.2025.11491634](https://doi.org/10.1109/ICCIT68739.2025.11491634)
- Abul Khayer, Shyla Afroge, Abdullah Al Mamun, Md. Asif Sajeed, **Md. Ashraful Hossen Akash**. “Transformer-Based Multi-Label Disease Prediction from Radiology Reports.”
28th International Conference on Computer and Information Technology (ICCIT 2025).
DOI: [10.1109/ICCIT68739.2025.11491786](https://doi.org/10.1109/ICCIT68739.2025.11491786)

EXPERIENCE

Research Assistant

May 2024 – Present

Supervised by Shyla Afroge

CSE, RUET

- Conducted research in deep learning for medical imaging, satellite imagery, and clinical text analysis, including data preprocessing, model development, and experimental evaluation.
- Contributed to three accepted international conference papers (ICCIT 2025, QPAIN 2026) involving multi-scale CNN architectures, transformer-based NLP models, and ensemble deep learning methods.

Software Engineer Intern

Feb 2025 – May 2025

Code Studio Software Company

Rajshahi, Bangladesh

- Gained experience with software development workflows and the Software Development Life Cycle (SDLC); designed relational database schemas and wrote SQL queries (CRUD, JOINS, aggregates).
- Built a full-stack CRUD/Blog application using Node.js, Django, React, and Next.js with MySQL, MongoDB, and PostgreSQL; implemented REST APIs, authentication, middleware, and rate limiting.

EDGE Training Program (PHP – Laravel)

May 2024 – Feb 2025

Bangladesh Computer Council (ICT Division)

CSE, RUET

- Completed an 8-month professional training under the “Enhancing Digital Government and Economy (EDGE)” project, gaining hands-on experience in backend development using PHP and Laravel.
- Developed MVC-based CRUD web applications and implemented database integration, authentication systems, and RESTful APIs following modern web development practices.

Private Tutor (Mathematics, Physics, Programming)

Mar 2022 – Present

- Tutored secondary and higher-secondary students in Mathematics, Physics, ICT, C programming, HTML, and database fundamentals.

- Guided students through problem-solving techniques, exam preparation, and foundational programming.

COMPETITIONS

Kaggle Competitions

- **Santa 2025 - Christmas Tree Packing** — Rank: **425/3357 (Top 13%)**.
- **Predicting Student Test Scores** — Rank: **96/4317 (Top 3%)**.
- Applied feature engineering, model training, and ensemble techniques to improve leaderboard performance on real-world tabular datasets.
- Kaggle profile: [Ashraful](#)

Codeforces Competitions

- Active participant in Codeforces rated contests (Div. 2, Div. 3, Div. 4). Current rating: **995**.
- Solved algorithmic problems involving arrays, greedy techniques, data structures.
- Codeforces profile: [ash_ra_ful](#)

PROJECTS

AlzDetect-Ai: Explainable Alzheimer's Disease Classification System

Developed an AI-powered system for multi-class Alzheimer's disease diagnosis from brain MRI scans using a custom multi-scale CNN and an ensemble of ResNet50 and Xception models.

- Trained and evaluated the model on 33,000+ MRI images, achieving strong multi-class performance across four disease stages.
- Applied explainable AI methods (Grad-CAM, Integrated Gradients, LIME) and deployed the model as a lightweight Streamlit web application for real-time inference.

Technologies: Python, TensorFlow/Keras, CNNs, Transfer Learning, XAI, Streamlit

[\[GitHub\]](#) [\[Live Demo\]](#)

Python Basics: Step-by-Step Learning Repository

Designed and maintained a structured Python learning repository for beginners and early-stage CSE students, covering core programming concepts through progressive, hands-on modules.

- Organized Python fundamentals into 18 sequential modules covering variables, data types, conditionals, loops, strings, collections, and problem-solving with practical examples.
- Developed interactive mini-programs (calculator, shopping cart, countdown timer) to reinforce learning and support self-study, exam preparation, and introductory programming practice.

Technologies: Python

[\[GitHub\]](#) [\[Learning Website\]](#)

Restaurant Management Web Application

Built a Laravel-based full-stack web application with MVC architecture, database integration, and responsive UI using Bootstrap.

[\[GitHub\]](#)

SKILLS

Machine Learning & DL	CNNs, Transformers, Explainable AI (XAI), Transfer Learning
Programming Languages	Python, C, PHP, JavaScript
Data & Databases	MySQL, PostgreSQL, MongoDB, SQL
Web Technologies	HTML, CSS, Bootstrap, Laravel, React, Node.js
Tools & Platforms	Git, GitHub, Kaggle, Codeforces, Linux

REFERENCES

Shyla Afroge

Associate Professor, Department of Computer Science & Engineering
Rajshahi University of Engineering & Technology (RUET)