Aabu Yousuf Raj

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Education

B.sc. **BRAC University**, Computer Science – Dhaka, Bangladesh · · · · · · Sept 2022 – present
GPA: 3.89/4.00 (Expected Graduation: Jan 31, 2026)
- Notable Courses: Advanced Algorithms, Artificial Intelligence, Machine Learning, Data Science, Natual Language Processing-II, Image Processing, Computer Vision, Neural Networks.

Working Experience

Student Tutor (Undergraduate TA), BRAC University – Dhaka, Bangladesh · · · · · Feb 2025 – May 2025
- Facilitated discussions, clarified course material, provided consultation to students, graded assessments, and helped organize course resources to enhance learning experiences.

Research Experience

Multimodal Deep Learning Architecture for Real-time Cattle Disease Identification, Unique Identification, and Weight Prediction · · · · · · Feb 2025 – present
Undergraduate thesis under the supervision of Dr. Jannatun Noor
- Built an AI-driven multimodal livestock management system combining deep learning and computer vision for automated cattle disease detection, unique animal identification, and non-invasive weight prediction. Designed and trained CNN/DNN models, integrated RGB image processing, and optimized the system for real-time deployment in farm environments.

Evaluating the Influence of AI Tools on Learning Efficiency, Academic Integrity, and Future Career Readiness · · · · · · Dec 2025 – present
- Conducting a comprehensive survey-based study on the impact of AI-powered learning tools on university students, exploring usage patterns, academic dependence, ethical views, and effects on critical thinking, decision-making, and long-term learning outcomes.

Academic Projects

Real-Time Traffic Prediction in Dhaka · · · · · · Github
Machine Learning, Computer Vision, Deep Learning
- A deep learning project analyzing street images to classify traffic congestion levels and predict real-time traffic patterns for urban planning.

Token-Level NER with RNNs · · · · · · Github
Natural Language Processing, Deep Learning
- A project evaluating RNN, LSTM, GRU, and BiLSTM architectures for token-level Named Entity Recognition on news datasets using the BIO tagging scheme.

AI-Powered Online Learning Platform · · · · · · Github
Web Development, AI Integration
- A web application enabling real-time communication, AI-assisted assessments, and collaborative learning with role-based user management.

Semi-Supervised Abdominal CT Segmentation · · · · · · Github
Medical Imaging, Computer Vision
- A semi-supervised framework using 2D nnU-Net for multi-organ abdominal CT segmentation, leveraging both labeled and unlabeled data to improve accuracy with sparse annotations.

Brain Tumor MRI Classification & Segmentation   Github

Muti-task Learning, Deep Learning

- A multi-task deep learning pipeline using U-Net variants to perform simultaneous brain tumor segmentation and subtype classification on MRI scans, with evaluation using Dice, IoU, and accuracy metrics.

Skills

Languages: C/C++, Python, Java, JavaScript, Assembly, MySQL, Bison, Flex

Technologies: LaTeX, Docker, DBMS, Git, Wireshark, Cisco Packet Tracer, OpenGL

Libraries: OpenCV, PyAV, PyTorch, Keras, Pandas, Scikit-learn, SciPy, NLTK, Matplotlib, Seaborn, p5.js

Leadership

Vice-President, BRAC University Marketing Association (BUMA)

As Vice President of the BRAC University Marketing Association, I lead the planning and execution of marketing strategies, manage team activities, and work closely with other departments to strengthen the association's presence and growth.

Cocurricular Activities

- Astro Olympiad, Math Olympiad, Biology Olympiad, Debate.

Extracurricular Activities

- Cricket, Football, Basketball, Volleyball, Running events, Chess, Caroom, Table Tennis.

Hobbies

- Traveling, Graphics Designing, Watching Sports

Achievements

- Selected as an officer cadet for Bangladesh Army of 87 Long Course

- Served as College Perfect in Military Collegiate School Khulna (2020-2021)

Reference

Dr. Jannatun Noor

- Assosiate Professor, Department of CSE
  Director, BSc in Data Science,
  United International University
  jannatun@cse.uiu.ac.bd