

EDUCATION

Bachelor of Science in Computer Science and Engineering
Daffodil International University

Jan 2022–Jan 2026

- CGPA: **3.88/4.00**
- Received **90% tuition fee waiver** under a merit-based scholarship
- **Notable Courses:** Data Structures, Algorithms, Discrete Mathematics, Data Communication, Object-Oriented Programming, Database Management Systems, Operating Systems, Software Engineering, Machine Learning

Exchange Semester in Computer Engineering
Dongseo University, South Korea

Sep 2023–Dec 2023

- GPA: **3.94/4.50**
- Received the fully funded **Global Korea Scholarship (GKS)**, awarded by the Government of the Republic of Korea
- **Notable Courses:** Artificial Intelligence, Mobile Programming, Cloud Computing, Computer Networks

RESEARCH EXPERIENCE

Graduate Researcher (Part-Time)
CSE AI Centre, Daffodil International University

Jan 2026–Present

- Conduct research in lightweight deep learning, medical-image analysis, computer vision, and scientific dataset development under the supervision of Professor Fernaz Narin Nur and Associate Professor Nazmun Nessa Moon.
- Design experiments, implement and evaluate deep-learning pipelines, analyse results, and contribute to manuscript preparation and technical review.

THESIS

Tabular Data-Based Lightweight Convolutional Neural Network For Electricity Energy Demand Prediction
Supervisor: Associate Professor Nazmun Nessa Moon

- Developed **TLCNN**, a lightweight convolutional neural network designed to process structured tabular data directly for electricity-demand forecasting, eliminating the need for complex tabular-to-image conversion.
- Built a robust preprocessing pipeline for the **BanE-16 energy dataset**, incorporating missing-value treatment, feature selection, standardization, target normalization, Gaussian-noise augmentation and CNN-compatible data restructuring.

SELECTED PUBLICATIONS Full list available on [Google Scholar](#)

- 2026 **Badhon, N. H.**, Preanto, S. A., Arefin, A. S. S. M. N., Hasan, K. J., & Islam, M. B. (2026). Temporal Convolutional Network Based Indoor Location Recognition from BLE Beacon Signals in Nursing Care Facility. *International Journal of Activity and Behavior Computing*, 2026(2), 1-17. [View Paper](#)
- 2026 Islam, A. H. M. S.*, **Badhon, N. H.***, Nur F. N.*, Sajib, M. T. A., Moon, N. N., Sultana, S. Bridging Neuroscience and Education: A Scoping Review of EEG-Based Cognitive and Emotional States in Educational Settings. *International Journal of Educational Research Open*, Elsevier. [Scopus Q1, CiteScore: 6.1] **Under Review**
- 2026 Salehin, I., **Badhon, N. H.**, Sajib, M. T. A., Rifat, M. S. H., & Moon, N. N. (2026). Predicting Peak Energy Demand Using Machine Learning Techniques for Efficient Electricity Supply Management. In *Engineering Applications of AI for Demand Forecasting* (pp. 217-229). CRC Press. [View Paper](#)
- 2025 **Badhon, N. H.***, Salehin, I.*, Sajib, M. T. A., Rifat, M. S. H., Noman, S. M., & Moon, N. N. (2025). TLCNN: Tabular data-based lightweight convolutional neural network for electricity energy demand prediction. *Global Energy Interconnection*. [Elsevier, Scopus Q1, IF: 2.6] [View Paper](#)
- 2025 Sajib, M. T. A., **Badhon, N. H.**, Salehin, I., Rifat, M. S. H., Ahmmed, F., & Moon, N. N. (2025). A comparative deep learning methodology for plant insect image classification: assessment of CNN architectures and augmentation techniques. *MethodsX*, 103680. [Elsevier, Scopus Q1, IF: 1.9] [View Paper](#)
- 2025 Salehin, I., Sajib, M. T. A., **Badhon, N. H.**, Rifat, M. S. H., Amin, N., & Moon, N. N. (2025). Systematic Literature Review of LLM-Large Language Model in Medical: Digital Health, Technology and Applications. *Engineering Reports*, 7(9), e70365. [Wiley, Scopus Q2, IF: 2.0] [View Paper](#)
- 2024 Salehin, I., Khan, M. R., Habiba, U., **Badhon, N. H.**, & Moon, N. N. (2024). BAU-Insectv2: An agricultural plant insect dataset for deep learning and biomedical image analysis. *Data in Brief*, 53, 110083. [Elsevier, Scopus Q1, IF: 1.4] [View Paper](#)

PROJECTS

Breast Cancer Segmentation and Classification Using Hybrid Deep Learning | [Project Link](#)

- Developed a two-stage breast ultrasound pipeline using U-Net segmentation followed by three-class classification with fused VGG16 and ResNet50 features.
- Achieved 95.94% accuracy, 95.93% F1-score, and 0.94 MCC on a held-out test set of 123 images.

Lung Histopathology Classification Using Image Enhancement and Transfer Learning | [Project Link](#)

- Built an image-enhancement and transfer-learning pipeline using threshold-based segmentation and pretrained architectures.
- Demonstrated the strongest performance with VGG16, reaching 80% test accuracy and 0.80 Macro F1-score on three lung tissue classes.

Temporal Convolutional Network–Based Indoor Location Recognition Using BLE Signals | [Project Link](#) | [Paper Link](#)

- Built a TCN-based indoor-localisation system using BLE RSSI data collected from a nursing care facility, with preprocessing for noisy and imbalanced sensor observations.
- Implemented causal dilated convolutions and residual connections to model temporal dependencies across 22 locations, achieving 66% accuracy and a 0.56 macro F1-score while outperforming non-temporal baselines.

SKILLS

Programming: Python, C, Java

Deep Learning Frameworks: PyTorch, TensorFlow, Keras

Machine Learning: Classification, regression, feature selection, model evaluation, Scikit-learn

Computer Vision: Image classification, semantic segmentation, transfer learning, CNNs, U-Net

Data Analysis and Visualisation: NumPy, Pandas, Matplotlib, Seaborn

Research Tools: LaTeX, Git/GitHub, Google Colab, Mendeley

English Proficiency: IELTS 6.5 – Listening 6.5, Reading 7.0, Writing 7.0, Speaking 6.0

EXTRA-CURRICULAR ACTIVITIES

- 2026 **Participant**, 8th ABC Challenge, Kyushu Institute of Technology, Japan
- 2025 **Participant**, Crack Dataset Contest, Daffodil International University [View Event](#)
- 2024 **Participant**, K-Culture Lover's Night, Embassy of the Republic of Korea [View Event](#)
- 2024 **Founding General Secretary**, Daffodil International University Research Society
- Coordinated research activities, events, and member engagement.
 - Helped promote a collaborative research culture among students.
- 2023 **Team Leader**, International Camp, Dongseo University, South Korea

AWARDS & ACADEMIC SERVICE

- 2025 **Research Award**, Division of Research, Daffodil International University [View Certificate](#)
- Recognized for **five** publications in Scopus-indexed journals.
- 2025 **Peer Reviewer**, *Digital Health*, SAGE Publishing [View Certificate](#)
- 2025 **Top Performer**, Computer Vision and Deep Learning for Medical Data Analysis Bootcamp, HIRL, DIU [View Certificate](#)
- 2024 **Research Award**, Division of Research, Daffodil International University [View Certificate](#)
- Recognized for a publication in a Scopus-indexed journal.
- 2023 **Global Korea Scholarship Awardee**, Government of the Republic of Korea
- 2015 **Government Scholarship**, Bangladesh Education Board and Ministry of Education

ACADEMIC REFERENCES

Nazmun Nessa Moon

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Dr. Fernaz Narin Nur

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