Nadia Sultana

Institute of Information Technology, Jahangirnagar University, Dhaka, Bangladesh

nadiasu.08@gmail.com | +8801927085260 | linkedin.com/in/sultana-nadia | github.com/NadiaSu08

About Me

Passionate about advancing human-centered artificial intelligence, with research interests in applying machine learning and data science to biomedical engineering and user experience. My focus lies in developing explainable and intelligent systems that enhance usability, accessibility, and real-world impact.

Education

M. Sc. in ICT, Institute of Information Technology, Jahangirnagar University   Sep 2024 – Present
Current CGPA: 3.71/4.00

B. Sc. in ICT, Institute of Information Technology, Jahangirnagar University   Feb 2019 – Sep 2024
CGPA: 3.69/4.00
Honors: Merit-Based Scholarship (for Admission Test, 1st Year, and 3rd Year academic results)

HSC in Science, Birshrestha Noor Mohammad Public College   Jul 2016 – Mar 2018
GPA: 5.00/5.00

Publications

Md. Akmol Masud, Sanjida Akter, **Nadia Sultana**, Mohammad Abu Yousuf, and Md Zia Uddin. **Multi-Layered Password-Based Steganography: A Novel Approach for Tiered Information Hiding.** In *Proceedings of the 2025 International Conference on Electrical, Computer and Communication Engineering (ECCE)*, pages 1–6. IEEE, Jan 2025. [View Paper on IEEE Xplore]

Md. Akmol Masud, Sanjida Akter, **Nadia Sultana,** Mohammad Shahidul Islam, Mohammad Abu Yousuf, Farzan Majeed Noori, et al. **MosQNet-SA: Explainable Convolutional-Attention Network for Mosquito Classification with Application as a RESTful API for Dengue and Malaria Risk Mapping.** 2024. [Preprint] DOI

S. Akter, M. A. Masud, M. S. I. Promi, **N. Sultana**, M. Ahmed, M. M. Rahman, M. A. Yousuf, S. Aloteibi, and M. A. Moni. **Dream: A Novel Explainable Neural Network for Detecting Sleep Apnea Using Single-Lead ECG Signals.** Feb 2025. [Preprint]

Research Interests

Explainable AI, Biomedical Data Analysis, Human Activity Recognition, Image Processing, UX for AI Systems

Work Experience

Associate UX Engineer, Synesis IT PLC. – Karwan Bazar, Dhaka, Bangladesh   Aug 2024 – Present
- Designed data-driven citizen service interfaces and optimized accessibility for national e-government platforms.
- Contributed to requirement engineering, user journey mapping, and interface design for systems.
- Developed and customized WordPress-based web platforms, ensuring responsive layouts.
- Created UX flows, prototypes, and interactive interfaces in Figma, aligning design decisions.
- Collaborated with developers to integrate usability research with functional system design.

Design and Content Executive, hia.care - Remote   Oct 2021 – Present
- Developed a library of 200+ multimedia assets, integrating eye-catching graphics and videos into presentations; this resource reduced presentation preparation time by 30%, enhancing overall team productivity and efficiency.

Graphic Designer, Eduhive(Hybrid) - Dhanmondi, Dhaka, Bangladesh   Sep 2022 - May 2023
- Designed brand-aligned visuals for Social media, web and print, solving creative challenges with accuracy and user focus.

Academic Thesis Works

M.Sc. Thesis (Individual Research)
Incep-BiLSTM-Attn: An Explainable Framework for Parkinson's Disease Diagnosis Using Voice Biomarkers
Developing a deep learning framework for Parkinson's Disease using biomedical voice data from the IPVS dataset including designing and implementing the model with Inception modules, BiLSTM networks, attention layers, and applying Explainable AI techniques to enhance interpretability and transparency for clinical use.
Supervisor: Dr. Fahima Tabassum, PhD

B.Sc. Thesis (Group Research, First Author)
Explainable CNN-GRU Model with Self-Attention for Human Activity Recognition Using Wearable Sensors through Data Augmentation
Developed a deep CNN-GRU-Self Attention model for human activity recognition across activities. Designed and implemented the model, performed data preprocessing, and integrated SHapley Additive exPlanations (XAI) to identify influential features. Coordinated project workflow and did experimental evaluation on UCI-HAR, WISDM, WISDM19 and PAMAP2 datasets.
Supervisor: Mohammad Abu Yousuf, PhD, Vice Chancellor, University of Frontier Technology, Bangladesh

Technical Skills

Programming: Python, Java, MATLAB, C, MySQL
Frameworks: TensorFlow, Keras, Scikit-learn, Spring Boot, Unity
Design: Figma, Adobe Illustrator, WordPress

Projects

Bookstore system   github
- Simple bookstore web application that allows users to perform CRUD (Create, Read, Update, Delete) operations on books, demonstrating fundamental concepts of web development with Spring Boot and Thymeleaf templating.
- Tools Used: Java Spring Boot, Thymeleaf, Bootstrap, MySQL

Wordle Game   github
- A Unity-based implementation of the popular word-guessing game, Wordle. Players have six attempts to guess a five-letter word, receiving feedback on each guess.
- Tools Used: C#, ASP.NET, ShaderLab, HLSL

 Explore more projects on GitHub

Volunteer Activities

Head of Department – Graphic Design, Youth School for Social Entrepreneurs   Oct 2021 – Jul 2022
- Led recruitment, supervised daily operations, and managed a team of **40+ members**, contributing to the team's recognition as the **Best Department**.

Vice President (IT), E-Business & Entrepreneurship Club, Jahangirnagar University   Aug 2022 – Sep 2024
- Oversaw IT operations, including the club's website and social media, while facilitating networking and improving programs to promote the club's mission.

Campus Ambassador, Youth Opportunities   Batch 2021
- Promoted youth opportunities on campus and social media, supported outreach efforts, and represented the organization in various activities.

References

Afrin Ahmed
Lecturer, Institute of Information Technology, Jahangirnagar University
PhD Candidate in Computer Science, University of Georgia
Email: afrin@juniv.edu