




MD MUZAKKER HOSSAIN

Ames, IA-50010, United States

✉ muzakker@iastate.edu  [muzakker.github.io](https://github.com/muzakker)  [muzakker](https://www.linkedin.com/in/muzakker)  [muzakker](https://twitter.com/muzakker)

Research Interest

Artificial Intelligence, Multimodal Machine Learning, High Performance Computing

Education

Iowa State University

Aug. 2023 – Present

Doctor of Philosophy (Ph.D.) in Computer Science

American International University-Bangladesh

Mar. 2018 – Nov. 2021

Bachelor of Science in Computer Science & Engineering

CGPA: **3.97/4.0** (*summa cum laude*)

Professional Experience

Graduate Teaching Assistant

January 2024 – Present

COM S 309: Software Development Practices

Iowa State University

- Mentoring 8 teams per semester in Java application development using Android Studio and Spring Boot.
- Conducting weekly progress reviews and providing technical guidance on git version control, CI/CD, Docker, and MySQL for server deployment.
- Assisting students in developing RESTful APIs, documenting with Javadoc (front-end) and Swagger (back-end).

Graduate Teaching Assistant

August 2023 – December 2023

COM S 228: Introduction to Data Structures

Iowa State University

- Conducted recitations and held office hours to support the lecture material and clarify doubts.
- Proctored examinations and graded student homework assignments, maintained exam integrity, enforced coding standards, and provided constructive feedback.
- Demonstrated expertise in Data Structures and Java, effectively assisted students in comprehending and applying fundamental concepts.

ICT Consultant (Remote)

December 2022 – June 2023

Titan ICT

Perth, WA, Australia

- Implemented Deep Neural Networks pre-trained with audio datasets to develop an advanced audio analytics system that can capture, analyze, and classify audio from different sources for mining environments.
- Worked on an automated Conversation AI (Voice Bot) solution for effective work management and scheduling using Python, Twilio, and Power Automate.

Trainee Information Technology Officer (Remote)

December 2022 – June 2023

Synergic Improvement Solutions Ltd.

Perth, WA, Australia

- Assisted with the planning and executing IT projects and initiatives.

Undergraduate Teaching Assistant

May 2021 - August 2021

American International University-Bangladesh

Dhaka, Bangladesh

- Assisted in two courses of Artificial Intelligence & Expert Systems, which comprised about 70 and 80 students.
- Collaborated closely with course instructors on lesson planning and preparing of the instructional materials.
- Maintained effective communication with instructors to report student progress and documented student performance.
- Conducted one-on-one meetings with students to address doubts and foster a supportive learning environment.

Tutor/Mentor

March 2018 - July 2023

Several Undergraduate Courses and Other Grades

- Provided tutoring and academic support to junior and peer students in challenging courses, including Discrete Mathematics, Algorithms, Theory of Computation, and Digital Electronics. Additionally, I offered part-time tutoring to Grade 5, Grade 7, Grade 10, and Grade 12 students.

Technical Skills

Programming Languages: Python, Java, C++, C#, Javascript

Libraries & Tools: Tensorflow, PyTorch, OpenCV, Pandas, Scikit-learn

Database: MySQL, Oracle, Microsoft SQL Server

Web Technologies: HTML5, CSS3, Flask, PHP, Jekyll

Software and Technologies: Weka, Git & GitHub, L^AT_EX

Research Experience

Research Assistant

June 2022 – December 2022

KI Research Lab

Dhaka, Bangladesh

- Developed a dataset for forecasting future lockdowns and implemented modified Artificial Neural Networks (ANN) to analyze the data, resulting in an accuracy rate of over 96%.
- Contributed to developing a convolutional neural network (CNN) model for detecting HER2 breast cancer from image data, achieving an accuracy rate of 88%.

Undergraduate Thesis

January 2021 - August 2021

American International University-Bangladesh

Dhaka, Bangladesh

- Background studies comprised existing methodologies for fake news detection and state-of-the-art techniques for handling dataset imbalances.
- Collected datasets through different sources were analyzed with the help of statistical and machine learning models and the results obtained by them. [Repository...](#)
- Presented the result as first author at *International Conference on 4th Industrial Revolution and Beyond (IC4IR) 2021*.

Publications

1. Hossain, M.M., Awosaf, Z., Prottoy, M.S.H., Alvy, A.S.M., Morol, M.K. (2022). Approaches for Improving the Performance of Fake News Detection in Bangla: Imbalance Handling and Model Stacking. *Proceedings of International Conference on Fourth Industrial Revolution and Beyond 2021*. Lecture Notes in Networks and Systems, vol 437. Springer, Singapore. https://doi.org/10.1007/978-981-19-2445-3_51
2. S. S. Das, A. S. Anik, M. M. Hossain, M. K. Morol, F. Jahan and M. A. Al-Jubair, "A Study on Future Lockdown Predictions using ANN," 2023 International Conference on Next-Generation Computing, IoT and Machine Learning (NCIM), Gazipur, Bangladesh, 2023, pp. 1-6, doi: 10.1109/NCIM59001.2023.10212686.

Honors & Awards

- **The Vice Chancellor's Award** 2023
Acknowledges the recipients' extraordinary efforts in completing a challenging thesis
American International University-Bangladesh
- **Summa Cum Laude** 2023
The highest academic honor for earning grades within the highest percentage of the department
American International University-Bangladesh
- **Dean's List Honors** 2018 - 2021
*Nominated **five** times in recognition of outstanding academic performance*
American International University-Bangladesh
- **Undergraduate Entrance Scholarship** 2018
*Ranked **4th** among the **700+** enrolled students for the Summer 2017-18 and Fall 2018-19 semesters*
American International University-Bangladesh
- **Academic Scholarship** 2018 - 2021
Merit-Based scholarship for maintaining academic excellence throughout the undergraduate period
American International University-Bangladesh
- **Bangladesh Government's Ministry of Education Scholarship** 2015
Scholarship awarded based on SSC result

Featured Projects

Banglore House Price Prediction: End-to-End Regression Project

- Developed a linear regression model using scikit-learn and implemented a web application using Python flask, with a user interface designed using HTML, CSS, and JavaScript. Utilized Numpy, Pandas, and Matplotlib for data manipulation and visualization and employed GridSearchCV for hyperparameter tuning.
- Repository: [Banglore House Price Prediction](#)

Bibliotheca: Web Based App

Spring 2021

- Created a digital library with integrated learning and blogging facilities, programmed using web technologies such as HTML, CSS, PHP, Javascript, et cetera.
- Project Description: [Bibliotheca: Web-based Library](#)

First Care: Java Swing Based App

Fall 2019

- Developed a GUI-based desktop application, implemented the four pillars of Object Oriented Programming, and Java concepts such as Association, Swing components, Swing Containers, et cetera.
- Project Description: [First Care: Java Swing Based Application](#)

Puthishala: GUI based C# App**Fall 2020**

- Built a library management system, programmed core concepts of Object Oriented Programming, implemented using Windows Forms Application (WPF), and connected with Microsoft SQL Server database.
- Repository Link: *Puthishala: Desktop Based Library Application*

Extracurricular

Gold Awardee**October 2019 - April 2021***The Duke of Edinburgh's International Award**Dhaka, Bangladesh*

- Engaged in various activities to promote personal growth and development, including skill development, social service, regular physical activities, and adventurous excursions.
- Successfully organized and participated in various events and initiatives to serve and support the community, including food and donation drives, events for underprivileged children, and efforts to provide warm clothing and blankets to those in need.
- Conducted research on the effectiveness of lockdown during COVID-19 and authored reports and essays on various topics.

Member & Volunteer**September 2019 - October 2021***AIUB Computer Club**American International University-Bangladesh*

- Coordinated in the organization of various events, including CS Fest, Cyber Gaming Fest, and others.
- Attained leadership, communication, problem-solving, group development, and management skills.

References

Available Upon Request.