

# Nafiz Ahmed

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## SYNOPSIS

Recent graduate with newfound passion for Data science and Machine learning research. Inspired by final semester course, actively developing relevant skills. Eager to apply budding knowledge to innovative research projects despite limited prior experience.

## EDUCATION

**B.Sc. in Computer Science and Engineering**

August 2019 - August 2023

*American International University-Bangladesh*

- CGPA: 3.93 out of 4.00 ([Transcript](#) [🔗](#))
- Major: Software Engineering

## PUBLICATIONS

**Two Proposed Models for Securing Data Management for Enterprise Resource Planning Systems Using Blockchain Technology**  
[🔗](#)

Undergraduate Thesis  
December 2023

**Nafiz Ahmed**, Anik Kumar Saha, Mustafa Ahmad Arabi, Sheikh Talha Jubayer Rahman, Dip Nandi

Contributions:

- Conceptualization, Methodology, Investigation, Editing & Revision
- Contributed in making 2 possible schemata to integrate Blockchain in an ERP system

**Deep Learning-Based Natural Language Processing in Human-Agent Interaction: Applications, Advancements, and Challenges**

Accepted

**Nafiz Ahmed**, Anik Kumar Saha, Md. Abdullah Al Noman, Jamin Rahman Jim, Md Mohsin Kabir, M. F. Mridha

Contributions:

- Conceptualization, Methodology, Editing & Revision
- Conducted comprehensive review of 150+ papers on deep learning-based NLP in Human-Agent Interaction, analyzing applications, algorithms, datasets, and key challenges

**A Systematic Literature Review on Privacy Preservation in Federated Learning**

Submitted

Anika Saba Ibte Sum, Zinniya Taffannum Pritee, Anik Kumar Saha, Mirza Asif Mahmud, **Nafiz Ahmed**, Yong Seok Hwang, Jungpil Shin, Kamruddin Nur

Contributions:

- Formal analysis, Writing, organization, Validation

## SKILLS

**Languages:** Python, R, C++, C#

**Frameworks:** PyTorch, TensorFlow, .NET, Laravel, React

**Data Analytics:** Pandas, NumPy, Scikit-learn, Matplotlib, Seaborn

**Computer Vision:** OpenCV, Keras, CNNs, Siamese Networks

**Softwares:** Mendeley, Overleaf, Postman, MS Excel, Notion, Figma

**Version Control:** Git (GitHub)

**Familiar with:** ECMAScript, PHP, LaTeX

## EXPERIENCE

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### Research Intern

September 2023 - March 2024

*Advanced Machine Intelligence Research Lab - AMIR Lab*

- Published a survey paper which explored 3 key domains: Natural Language Processing, Deep Learning, and Human-Agent Interaction
- Integrated feedback from 3 experts, completing 1 major revision for the survey paper
- Enhanced academic writing, research gap analysis, and communication skills
- Led a group of three, demonstrating leadership and collaboration skills
- Contributed to weekly research discussions and idea generation

### Jr. Software Engineer

January 2023 - August 2023

*Shapla Infosys*

- Implemented tailored solutions from stakeholder feedback, boosting project satisfaction by 40%
- Enhanced NPO user engagement through strategic UI/UX design through implementations of 20+ prototypes which were used by group of three
- Engineered a responsive front-end using cutting-edge web technologies, achieving a 98% responsiveness score
- Architected scalable back-end systems to support dynamic content

## SCHOLARSHIPS & AWARDS

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### Academic Scholarship

Awarded for exceptional academic performance, including:

- Maintaining a CGPA of 3.75 or higher
- Completing 30+ credits across Spring and Fall semesters
- Earning a minimum grade of 'B' in all courses

### Magna Cum Laude (Silver Medal) [Expected]

Awarded for maintaining a CGPA between 3.80 - 3.94, ensuring:

- No drops during academic tenure
- No grades lower than 'B'
- No retakes throughout academic courses

### Dean's List Honors

Awarded **4 times** for Academic Excellence during:

- Fall & Spring-2021
- Fall & Spring-2022

## ASSESSMENTS

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### IELTS ([Result](#) [↗](#))

August 27, 2024

Overall Band: 7.5 (Listening: 8.5, Reading: 8, Writing: 6, Speaking: 7)

## PROJECTS

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### ResNet-for-Chest-Xray

[ResNet-for-Chest-Xray](#) [↗](#)

- Dataset: [COVID-19 Radiography Database](#) [↗](#)
- Designed and implemented ResNet50 on Chest X-ray
- Pre-processed approximately 1.6K Image data to train ResNet50

### Music and Mental Health: KNN Classification of Music Effects

[Music & Mental Health Relation](#) [↗](#)

- Dataset: [Music & Mental Health Survey Results](#) [↗](#)
- TensorFlow, NumPy, k-Nearest Neighbors (k-NN)
- Refined a 1.7K+ entry music survey dataset through data pre-processing and feature engineering
- Developed and trained the KNN model to classify the effect of music on mental health

## Arduino-based Fire Detection and Alert System

[Fire Detection and Alert System](#) 

- Utilized LM35 and MQ-2 sensors to detect fire based on temperature and smoke levels
- Activated visual (LED) and audible alarms (speaker) upon detection of fire
- Sent SMS alerts with GPS coordinates using a GSM module to pre-configured phone numbers
- Controlled a servo motor to unlock emergency exits during a fire event
- Displayed real-time system status (e.g., "NO FIRE", "FIRE ALERT") on a 16x2 LCD display