

Farzad Ahmed

George Mason University

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<https://farzad-1996.github.io>

ResearchGate: <https://www.researchgate.net/profile/Farzad-Ahmed>

Github: <https://github.com/Farzad-1996>

Education

George Mason University

Ph.D. in Computer Science

Fairfax, VA, USA

Fall 2023 - Ongoing

Ahsanullah University of Science and Technology

B. Sc. in Computer Science and Engineering

Dhaka, Bangladesh

Fall 2015 - Spring 2019

CGPA: 3.923 on a scale of 4.00 (1st in Merit Position)

Mastermind School

A levels

Dhaka, Bangladesh

2013 - 2015

GPA: 5.00 on a scale of 5.00

Mastermind School

O levels

Dhaka, Bangladesh

2013

GPA: 5.00 on a scale of 5.00

Research Interests

Natural Language Processing, Computer Vision, Health Informatics, Medical AI, Explainable AI

Publications

- Farzad Ahmed, JA Jerome, Meliha Yetisgen and Özlem Uzuner "A Systematic Analysis of Large Language Models with RAG-enabled Dynamic Prompting for Medical Error Detection and Correction". Submitted for publication (under review) in *Journal of Biomedical Informatics*.
- Namu Park, Farzad Ahmed, Zhaoyi Sun, Kevin Lybarger, Ethan Breinhorst, Julie Hu, Özlem Uzuner, Martin Gunn and Meliha Yetisgen "Automated Identification of Incidentalomas Requiring Follow-Up: A Multi-Anatomy Evaluation of LLM-Based and Supervised Approaches". Submitted for publication (under review) in *Journal of Biomedical Informatics*.
- Faisal Muhammad Shah, Sajib Kumar Saha Joy, Farzad Ahmed, Tonmoy Hossain, Mayeesha Humaira, Amit Saha Ami, Shimul Paul, Md Abidur Rahman Khan Jim, and Sifat Ahmed. "A Comprehensive Survey of COVID-19 Detection Using Medical Images". Published in *SN Computer Science: A Springer Nature Journal*, 2021.
- Md Tanvir Rouf Shawon, GM Shibli, Farzad Ahmed, Sajib Kumar Saha Joy, and Nibir Chandra Mandal. "Explainable Cost-Sensitive Deep Neural Networks for Brain Tumor Detection from Brain MRI Images Considering Data Imbalance". Submitted for publication (under review) in *Multimedia Tools and Applications: A Springer Journal*, 2024.
- Md Tanzim Reza, Farzad Ahmed, Shihab Sharar, and Annajiat Alim Rasel. "Interpretable Retinal Disease Classification from OCT Images Using Deep Neural Network and Explainable AI". Published in *International Conference on Electronics, Communications and Information Technology (ICECIT 2021)*.

- **Farzad Ahmed**, Samiha Sultana, Md Tanzim Reza, Sajib Kumar Saha Joy, and Md. Golam Rabiul Alam. “**Interpretable Movie Review Analysis Using Machine Learning and Transformer Models Leveraging XAI**”. Published in *IEEE Asia-Pacific Conference on Computer Science and Data Engineering (IEEE CSDE 2022)*, Gold Coast, Australia.
- Sajib Kumar Saha Joy, **Farzad Ahmed**, Al Hasib Mahamud, and Nibir Chandra Mandal. “**An Empirical Study on How Developers Discussed Pandas Topics**”. Published in *International Conference on Machine Intelligence and Emerging Technologies (MIET 2022)*, Noakhali, Bangladesh.
- Faisal M. Shah, **Farzad Ahmed**, Sajib Kumar Saha Joy, Sifat Ahmed, Samir Sadek, Rimon Shil, and Md. Hasanul Kabir. “**Early Depression Detection from Social Network Using Deep Learning Techniques**”. Published in *2020 IEEE Region 10 Symposium (TENSYP)*, 5-7 June 2020, Dhaka, Bangladesh.
- Noushin Afrin, Md Mahamudul Hasan, Mohammed Fazlay Elahi Safin, Khondakar Rifat Amin, Md Zahidul Haque, **Farzad Ahmed**, and Md Tanvir Rouf Shawon. “**Bengali License Plate Recognition: Unveiling Clarity with CNN and GFP-GAN**”. Published in *2023 26th International Conference on Computer and Information Technology (ICCIT)*, 13-15 December 2023, Cox’s Bazar, Bangladesh.
- Aysha Gazi Mouri, Purnendu Talukder, Tanvir Rahman Anik, Ifti Sam Ibn Rahman, Sajib Kumar Saha Joy, Md Tanvir Rouf Shawon, **Farzad Ahmed**, and Nibir Chandra Mandal. “**An Empirical Study on Bengali News Headline Categorization Leveraging Different Machine Learning Techniques**”. Published in *2022 25th International Conference on Computer and Information Technology (ICCIT)*, Bangladesh.

Current Research

- **Medical Fact Checking** – Developing NLP models to identify and correct factual inaccuracies in clinical texts.
- **Radiology Detect: Incidentaloma Assessment** – Leveraging NLP techniques for automatic detection and evaluation of incidental findings in radiology reports.
- **Pulmonary Embolism Detection** – Utilizing NLP techniques to assist in the detection of pulmonary embolisms from radiology reports and imaging data.

Experience

Graduate Research Assistant

Department of Computer Science
George Mason University, Fairfax, VA, USA

August 2024 - Present

Graduate Teaching Assistant

Department of Computer Science
George Mason University, Fairfax, VA, USA

August 2023 - August 2024

Lecturer

Department of Computer Science & Engineering
Ahsanullah University of Science and Technology, Dhaka, Bangladesh

December 2020 - August 2023

Lecturer (Part Time)

Department of Computer Science & Engineering
BRAC University, Dhaka, Bangladesh

February 2020 - December 2020

Technical Skills

Languages: Python (primary), C, C++, C#, Java, JavaScript, HTML5

Deep Learning Frameworks: PyTorch, TensorFlow, Keras

Natural Language Processing: Hugging Face Transformers, SpaCy, NLTK, Scikit-learn

Large Language Models (LLMs): LLaMA, GPT, fine-tuning with LoRA, prompt engineering, chain-of-thought reasoning

Computer Vision: OpenCV, CNNs, Vision Transformers (ViTs)

Database: MySQL

Other Tools: LaTeX, Git, Jupyter Notebook, Eclipse, NetBeans, Microsoft Visual Studio, PyCharm

Awards & Achievements

- "Reached 200+ citations on my Google Scholar profile."
- "Dean's List of Honor" (based on B.Sc. result)
- Certificate on Presentation at 2020 IEEE Region 10 Symposium (TENSYP), 5-7 June 2020, Dhaka, Bangladesh
- Certificate for completing the courses "Neural Networks and Deep Learning" & "Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization" in Coursera
- Undergraduate admission sub-committee member of 3 consecutive semesters at Ahsanullah University of Science and Technology

Extracurricular Activities

- Advisor of Cefalo CodeFiesta 2022: AUST Inter University Programming Contest
- Organizer at ICCIT 2020: The 23rd International Conference on Computer and Information Technology
- Organizer of Intra-AUST Programming Contest Fall 2018