

Syeda Sabrina Akter

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Research Interests

Large Language Models, Generative AI, Deep Learning, Text and Framing Analysis, Educational Assessment and Evaluation, Low-Resource and Multilingual NLP, Speech Recognition, Speech Translation.

Programming Skills

Python, PyTorch, TensorFlow, Java, C, C++, PHP, UNIX shell scripting, SQL, MySQL, , and others

Education

George Mason University, Ph.D. in Computer Science 2021 - Expected 2026

- Advisor: Antonios Anastasopoulos, Ph.D, Assistant Professor
- Research: *NLP and LLMs Applications in High-Stakes Specialized Domains*

George Mason University, M.S. in Computer Science 2024

- Advisor: Antonios Anastasopoulos, Ph.D, Assistant Professor
- Cumulative GPA: 4.00/4.00

Bangladesh University of Professionals, B.Sc. in Computer Science and Engineering 2018

- Bachelor Thesis: *Development of a Machine Learning Framework for Sorting and Classifying Unstructured Data from Resumes*
- Advisor: Hasan Sarwar, Ph.D
- Cumulative GPA: 3.70/4.00

Research Experience

Graduate Research Assistant, George Mason University 2021 – Present

- **LLMs in Specialized Domains:**
 - *Education*: Applied LLMs to automate and simplify the analysis of school improvement plans, enhancing evaluation of impacts on school environments and student growth.
 - *Policy Analysis*: Utilized LLMs for topic extraction from tech policy documents and interviews, focusing on automating and streamlining the process traditionally requiring manual expert annotation.
- **Multilingual News Framing Analysis:**
 - Enhanced multilingual news framing analysis using fine-tuning techniques with LLMs.
 - Conducted data collection through crowdsourcing; established benchmarks for analysis in Bengali and Portuguese.
- **Predicting Performance of Multilingual LLMs Across Multiple Languages**
 - Developed a performance prediction system for multilingual NLP models based on the LITMUS model, enhanced with three new features and model ensembling. Achieved improvements over the baseline.
 - SUMEval 2022 Shared Task.

Publications

1. The LLM Effect: Are Humans Truly Using LLMs, or Are They Being Influenced By Them Instead? EMNLP 2024

Alex Choi*, **Syeda Sabrina Akter***, JP Singh, Antonios Anastasopoulos.
Proceedings of the 2024 Conference on Empirical Methods in Natural Language Processing. November 2024.
Miami, Florida, USA.

2. A Study on Scaling Up Multilingual News Framing Analysis

NAACL 2024

Syeda Sabrina Akter and Antonios Anastasopoulos.

Findings of the Association for Computational Linguistics: NAACL 2024, pages 4156–4173, Mexico City, Mexico. Association for Computational Linguistics.

3. Principal-Supervisor and Machine Generated Evaluation Scores of Principal Performance Portfolios in a Rurally-Focused Multi State Evaluation System: Their Reliability, Validity, Differences, and Determinants

AEFP 2024

Seth B Hunter, David S Woo, Antonios Anastasopoulos, Katherine M Bowser, **Syeda S Akter**, Sarah L Hairston, Thomas W Hairston, and Eter Mjavanadze.

49th Annual Conference of Association for Education Finance and Policy. March 14-16, 2024. Baltimore, Maryland.

4. The GMU System Submission for the SUMEval 2022 Shared Task

ACL 2022

Syeda Sabrina Akter and Antonios Anastasopoulos.

Proceedings of the First Workshop on Scaling Up Multilingual Evaluation, pages 13–20, Online. Association for Computational Linguistics.

5. A systematic review on the use of AI and ML for fighting the COVID-19 pandemic

IEEE Journal 2021

Islam, Muhammad Nazrul, Toki Tahmid Inan, Suzzana Rafi, **Syeda Sabrina Akter**, Iqbal H. Sarker, and AKM Najmul Islam.

IEEE Transactions on Artificial Intelligence 1, no. 3 (2020): 258-270.

6. An IoT based proposed system for monitoring manhole in context of Bangladesh

iCEEiCT 2018

Saadnoor Salehin, **Syeda Sabrina Akter**, Anika Ibnat, Tasmiah Tamzid Anannya, Nurun Nahar Liya, Manisha Paramita, and Md Mahboob Karim.

In 2018 4th International Conference on Electrical Engineering and Information & Communication Technology (iCEEiCT), pp. 411-415. IEEE, 2018.

Teaching Experience

Graduate Teaching Assistant, Department of CS, GMU

2021 - 2024

- **Courses:** Advanced Natural Language Processing, Software Testing, Data Structures, Object Oriented Programming, Database Concepts.

Awards

- **Distinguished Academic Achievement Award**, 2023-2024, Department of Computer Science, GMU
- **Outstanding Graduate Teaching Assistant Award**, 2022-2023, Department of Computer Science, GMU
- **Best Project Award**, Faculty of Electrical and Computer Engineering (2017, MIST)
- **Commandant's List Award** for Academic Excellence (2016, MIST)
- **IUT ICT Fest Project Showcasing – Runners Up** (2017, Islamic University of Technology)

Service

- Reviewer for Association for Computational Linguistics
- Volunteer for 2022 Annual Conference of the North American Chapter of the Association for Computational Linguistics
- Teaching Assistant to a guest Lecture in Georgetown University, 2023
- Teaching Assistant for Summer Guild Breakthrough tech 2021, 2022