ANIRBAN SAHA ANIK

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RESEARCH INTERESTS

My research focuses on **Natural Language Processing (NLP)** and **Large Language Models (LLMs)**, with special interest in areas like retrieval-augmented generation (RAG), misinformation detection, and fact-grounded response generation. I aim to build context-aware, interpretable, and **Socially Responsible AI** systems that support critical domains such as public health and crisis communication. My long-term goal is to design adaptive, **Human-Aligned AI** models that improve communication, decision-making, and trust in real-world scenarios.

EDUCATION

University of North Texas (UNT)   **Denton, TX**
Master of Science, Data Science (GPA: 4.0/4.0)   *December 2025*
American International University-Bangladesh (AIUB)   **Dhaka, Bangladesh**
Bachelor of Science, Computer Science & Engineering (CGPA: 3.59/4.0)   *December 2021*

PUBLICATIONS

- **A. S. Anik**, X. Song, E. Wang, B. Wang, B. Yarimbas, Lingzi Hong. Multi-Agent Retrieval-Augmented Framework for Evidence-Based Counterspeech Against Health Misinformation. *Conference on Language Modeling* (**COLM 2025**). arXiv:2507.07307 [***Runner-Up**, SIG-SM Social Media Research Competition 2025*]

- X. Song, **A. S. Anik**, E. Blanco, V. Frías-Martínez, Lingzi Hong. A Dynamic Fusion Model for Consistent Crisis Response. *Conference on Empirical Methods in Natural Language Processing* (**EMNLP 2025**) arXiv:2509.01053

- X. Song, **A. S. Anik**, D. Barua, P. Luo, J. Ding, Lingzi Hong. Speaking at the Right Level: Literacy-Controlled Counterspeech Generation with RAG-RL. *Conference on Empirical Methods in Natural Language Processing* (**EMNLP 2025**), arXiv:2509.01058

- **A. S. Anik**, M. F. K. Chowdhury, A. Wyckoff, Sagnik Ray Choudhury. ClaimIQ at CheckThat! 2025: Comparing Prompted and Fine-Tuned Language Models for Verifying Numerical Claims. *Conference and Labs of the Evaluation Forum* (**CLEF 2025**), CEUR-WS Vol-4038

- X. Song, **A. S. Anik**, V. Frías-Martínez, Lingzi Hong. Dynamic Fusion of Large Language Models for Crisis Communication. *Int'l Conf. on Information Systems for Crisis Response and Management* (**ISCRAM 2025**), DOI:10.59297/nqysjq45

- M. Arman, N. Prottush, M. A. Rusho, A. Datta, **A. S. Anik**, D. M. Dohan, M. A. U. I. Sajid, I. A. Sheikh, M. K. Jahna. A Hybrid Attention-Guided Fusion Network with Grad-CAM for MPox Skin Lesion Classification. *4th Int'l Conf. on Computing and Machine Intelligence* (**ICMI 2025**), DOI:ICMI65310.2025.11141216

- S. S. Das, **A. S. Anik**, Md. Kishor Morol, M. S. Mahmood. Outcome-Based Education: Evaluating Students' Perspectives Using Transformer. *27th Int'l Conf. on Computer and Information Technology* (**ICCIT 2024**), DOI:10.1109/ICCIT64611.2024.11021724

- S. S. Das, **A. S. Anik**, M. M. Hossain, Md. Kishor Morol, F. Jahan, M. A.-A. Jubair. A Study on Future Lockdown Predictions Using ANN. *Int'l Conf. on Next-Generation Computing, IoT and Machine Learning* (**NCIM 2023**), DOI:10.1109/NCIM59001.2023.10212686

- **A. S. Anik**, K. Chakraborty, B. Datta, A. Kader, Md. Kishor Morol. A Comparative Analysis for the Detection of COVID-19 from Chest X-ray Dataset. *Int'l Conf. on Recent Progresses in Science, Engineering and Technology* (**ICRPSET 2022**), DOI:10.1109/ICRPSET57982.2022.10188570

TECHNICAL SKILLS

NLP & LLMs: Transformers, Hugging Face, RAG, LoRA, RLHF, Prompt Engineering
Programming Languages: Python, R, SQL, LaTeX
ML/DL Frameworks: PyTorch, TensorFlow, Scikit-learn
Data Processing: Pandas, NumPy, PySpark
Data Engineering & Analytics: Microsoft Fabric, Power BI, Tableau
Visualization: Matplotlib, Seaborn, Plotly
Development Tools: Git, Jupyter, Linux, Docker

PROFESSIONAL EXPERIENCE

Data Insights Analyst (Internship)
SEES Group, Franklin, TN   *Aug 2025 – Present*
- Developing data engineering pipelines and analytics solutions using Microsoft Fabric for enterprise data integration and transformation.
- Implementing data governance frameworks, compliance standards, and security protocols to ensure data integrity and regulatory adherence.
- Collaborating with stakeholders to optimize data workflows, establish data quality standards, and enhance analytics infrastructure.

Graduate Research Assistant
University of North Texas | Advisor: Lingzi Hong   *May 2025 – Present*
- Conducting research on retrieval-augmented generation (RAG) and LLM-based systems for generating contextually relevant, evidence-based responses in health communication and crisis scenarios.
- Developing multi-agent frameworks for automated counter-speech generation against health misinformation, resulting in 3 publications at top-tier venues (EMNLP, COLM).

Graduate Teaching Assistant
University of North Texas   *Aug 2024 – May 2025*
- Assisting in teaching *Data Visualization and Communication* and *Introduction to Data Science* courses.
- Guided students in Python, R, Tableau, Power BI, and SQL; graded assignments; and provided academic support.
- Evaluated assignments and projects, providing detailed feedback to enhance student learning outcomes.

Research Assistant
American International University-Bangladesh | Advisor: Md. Kishor Morol   *May 2022 – Dec 2022*
- Conducted medical data analysis using deep learning for disease detection, contributing to 3 publications on COVID-19 detection, educational assessment, and pandemic prediction models.
- Mentored undergraduate students in research methodology, experimental design, and technical writing for conference submissions.

Intern – Enterprise Applications (Microfinance)
BRAC, Dhaka, Bangladesh   *Mar 2022 – May 2022*
- Performed UAT testing and software QA for microfinance enterprise applications.
- Gathered feedback from 5+ branches to improve user experience and documented system requirements.
- Proposed interface and process improvements to streamline workflow efficiency.

Teaching Assistant
American International University-Bangladesh   *Sep 2021 – Dec 2021*
- Assisted in *Introduction to Database*, supporting students with SQL queries, relational schema design, and database implementation.
- Provided individualized academic support through office hours and troubleshooting sessions.

PROFESSIONAL ACTIVITIES

- **Reviewer:** ACM/IEEE Joint Conference on Digital Libraries (JCDL), Conference and Labs of the Evaluation Forum (CLEF)

AWARDS AND HONORS

- **Runner-Up, SIG-SM Social Media Research Competition 2025**, Selected paper on Multi-Agent RAG Framework among top 6 finalists

- **1st Place, Health Informatics & Data Science Day (Poster)**, University of North Texas

- **COLM 2025 Travel Scholarship** – Conference on Language Modeling

- **Graduate Student Travel Award**, Toulouse Graduate School, UNT (Summer 2025) – ISCRAM 2025

- **TGS Summer Award**, Toulouse Graduate School, UNT (Summer 2025) – Competitive tuition support