

Md Mahadi Hasan Nahid

 PhD student in Computing Science, University of Alberta, Canada.
 mnahid@ualberta.ca  (825) 558-0127  Scholar  Website  GitHub  LinkedIn

Education

University of Alberta

PhD in Computing Science

AB, Canada

2024–present

Supervisor: Prof. Davood Rafiei

Research Area: Information Retrieval, Grounding and Complex Reasoning in Structured Data

University of Alberta

MSc (Thes.) in Computing Science, GPA 4.00/4.00

AB, Canada

2022–2024

Thesis: Improving Table Reasoning through Table Decomposition and Normalization [thesis]

Shahjalal University of Science and Technology (SUST)

BSc (Engg.) in Computer Science, GPA 3.82/4.00, Class Position: 1st / 54 Students

SYL, Bangladesh

2016

Thesis: Bengali Speech Recognition System

Selected Publications

For a complete list of publications, please see my Google Scholar profile.

2024 -

- [1] **Md Mahadi Hasan Nahid**, and Davood Rafiei. 2026 "PRISM: Agentic Retrieval with LLMs for Multi-Hop Question Answering." In Proceedings of the 2026 Conference on Empirical Methods in Natural Language Processing. **[EMNLP 2026]**
- [2] **Md Mahadi Hasan Nahid**, Davood Rafiei, Weiwei Zhang, and Yong Zhang. 2026. Rethinking Schema Linking: A Context-Aware Bidirectional Retrieval Approach for Text-to-SQL. In Findings of the Association for Computational Linguistics: EACL 2026, pages 4516–4546, Rabat, Morocco. Association for Computational Linguistics. **[EACL 2026]**
- [3] **Md Mahadi Hasan Nahid** and Davood Rafiei. 2024. NormTab: Improving Symbolic Reasoning in LLMs Through Tabular Data Normalization. In Findings of the Association for Computational Linguistics: EMNLP 2024, pages 3569–3585, Miami, Florida, USA. Association for Computational Linguistics. **[EMNLP 2024]**
- [4] **Md Mahadi Hasan Nahid** and Davood Rafiei. 2024. TabSQLify: Enhancing Reasoning Capabilities of LLMs Through Table Decomposition. In Proceedings of the 2024 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies (Volume 1: Long Papers), pages 5725–5737, Mexico City, Mexico. Association for Computational Linguistics. **[NAACL 2024]**

2016 - 2023

- [1] Md Yasir Ahmed, Sk Shabaz Uddin, **Md Mahadi Hasan Nahid** (2023). Bangla Handwritten Text Recognition: A Segmentation-based Approach to Recognize Bangla Numeral Using Deep CNN. 7th International Conference on Engineering Research, Innovation and Education (ICERIE 2023). SUST.
- [2] Kalyan Das, MN Srinivas, Pabel Shahrear, SM Saydur Rahman, **Md Mahadi Hasan Nahid**, BSN Murthy, 2023. Transmission dynamics and control of COVID-19: A mathematical modelling study. Journal of Applied Nonlinear Dynamics, 12(2), pp.405-425.
- [3] Pabel Shahrear, SM Saydur Rahman, **Md Mahadi Hasan Nahid** (2021). Prediction and mathematical analysis of the outbreak of coronavirus (COVID-19) in Bangladesh. Results in Applied Mathematics, 10, 100145.
- [4] Towhid Ahmed Foyzal, Mohaimen Abid Mahadi, **Md Mahadi Hasan Nahid**, Ayesha Tasnim (2021, November). Bangla-ExtraSum: Comparative Analysis of Different Methods in Automated Extractive Bengali Text Summarization. In 2021 5th International Conference on Electrical Engineering and Information Communication Technology (ICEEICT) (pp. 1-6). IEEE.
- [5] Md Ali Azad, Hijam Sushil Singha, **Md Mahadi Hasan Nahid** (2021, August). Zilla-64: A Bangla Handwritten Word Dataset Of 64 Districts Name of Bangladesh and Recognition Using Holistic Approach. In 2021 International Conference on Science & Contemporary Technologies (ICSCT) (pp. 1-6). IEEE.
- [6] Md Ali Azad, Hijam Sushil Singha, **Md Mahadi Hasan Nahid** (2020, November). Bangla handwritten character recognition using deep convolutional autoencoder neural network. In 2020 2nd International Conference on Advanced Information and Communication Technology (ICAICT) (pp. 295-300). IEEE. **[Honorable Mention Award]**

- [7] Soumik Sarker, Md Ekramul Islam, Jillur Rahman Saurav, **Md Mahadi Hasan Nahid** (2020, November). Word completion and sequence prediction in bangla language using trie and a hybrid approach of sequential LSTM and N-gram. In 2020 2nd International Conference on Advanced Information and Communication Technology (ICAICT) (pp. 162-167). IEEE.
- [8] Syeda Tamanna Alam Monisha, Sourav Sarker, **Md Mahadi Hasan Nahid** (2019, September). Bengali question answering system for factoid questions: A statistical approach. In 2019 International Conference on Bangla Speech and Language Processing (ICBSLP) (pp. 1-5). IEEE.
- [9] Syeda Tamanna Alam Monisha, Sourav Sarker, **Md Mahadi Hasan Nahid** (2019, May). Classification of bengali questions towards a factoid question answering system. In 2019 1st International Conference on Advances in Science, Engineering and Robotics Technology (ICASERT) (pp. 1-5). IEEE.
- [10] Shomi Khan, Khadiza Tul Kubra, **Md Mahadi Hasan Nahid** (2018, December). Improving answer extraction for bangali q/a system using anaphora-cataphora resolution. In 2018 International Conference on Innovation in Engineering and Technology (ICIET) (pp. 1-6). IEEE.
- [11] Zakia Sultana Ritu, Nafisa Nowshin, **Md Mahadi Hasan Nahid**, & Ismail, S. (2018, September). Performance analysis of different word embedding models on bangla language. In 2018 International Conference on Bangla Speech and Language Processing (ICBSLP) (pp. 1-5). IEEE.
- [12] **Md Mahadi Hasan Nahid**, Bishwajit Purkaystha, Md Saiful Islam (2017, December). Bengali speech recognition: A double layered LSTM-RNN approach. In 2017 20th international conference of computer and information technology (ICCIT) (pp. 1-6). IEEE.
- [13] **Md Mahadi Hasan Nahid**, Md Ashraful Islam, Md Saiful Islam (2016, May). A noble approach for recognizing bangla real number automatically using cmu sphinx4. In 2016 5th international conference on informatics, electronics and vision (ICIEV) (pp. 844-849). IEEE.

Preprint*

- [1] **Md Mahadi Hasan Nahid**, and Sadid Bin Hasan. "Safesynthdp: Leveraging large language models for privacy-preserving synthetic data generation using differential privacy." arXiv preprint arXiv:2412.20641 (2024).

Conference Review

Reviewer: COLM 2026, EACL 2026, EMNLP 2025, ACL 2025, NAACL 2025

Subreviewer: ICDE 2026, ICDE 2025, WSDM 2024, SIGIR 2023, CIKM 2023

Awards

1. Alberta Innovates Graduate Student Scholarship (AIGSS)	Sep 2023 - Aug 2026
2. Alberta Graduate Excellence Scholarship (AEGS)	Sep 2023 - Mar 2024
3. Alberta Machine Intelligence Institute (Amii) Talent Bursary, Amii	2023, 2024, 2025
4. University of Alberta Graduate Recruitment Scholarship	Sept 2022
5. Runner Up Award - AIForBangla season 1	Feb 2022
6. Vice Chancellor Award (For Undergraduate Performance) 🏆	2020
7. Fifty-Sixth place, ICPC World Finals-2018, Beijing, China (Co-Coach)	2018
8. Prime Minister Gold Medal (For Undergraduate Performance) 🏆	2016
9. University Scholarship (SUST)	2012 - 2015

Teaching and Research Experience

Huawei Technologies Canada Co., Ltd., Burnaby, Canada.

Associate Researcher (Intern)

BC, Canada

Sep 2024 - April 2025

- Big Data and Intelligence platform Lab, Vancouver
- Research on structured data reasoning and natural language interface to databases

University of Alberta, Canada

Graduate Research Assistant Fellow

AB, Canada

May 2023 - present

- Graduate Research Assistant Fellowship (GRAF), S23, S24
- Conduct research on Information Retrieval and Tabular Data Reasoning

University of Alberta, Canada

Graduate Teaching Assistant

AB, Canada

Sep 2022 - present

- **Course:** **CMPUT 291** - File and Database Management (F22, W23, F23, W24, F25, W26)
- Conduct the lab sessions and provide explanations about the lab tasks
- Assist the students with their lab tasks. Grade assignments and lab quizzes and provide feedback
- Attend TA meetings with instructor and other TAs, respond to students' questions via email

Shahjalal University of Science and Technology

SYL, Bangladesh

Faculty Member

Sep 2017 - Aug 2022

- **Course:** OOP, Communication Engineering, Introduction to Computer Language
- Conducted researches on the area of NLP and ML.
- Mentored 12 undergrad students on their final year research projects.
- Mentored 6 Programming Teams for national and international programming contests

Center for Research, Testing and Consultancy, CSE, SUST

SYL, Bangladesh

Member

Jan 2020 - Aug 2022

- **Project:** Digital Sylhet City - Automation of Sylhet M. A. G. Osmani Medical College Hospital (the largest government hospital in Sylhet Division)
- **Role:** Supported the research and development team for requirements engineering and participated in designing the product's system architecture.

Shahjalal University of Science and Technology

SYL, Bangladesh

Research Coordinator, SUST NLP Lab

Jan 2018 - Aug 2022

- Engaged in collaborative research developing models for Bangla Question Answering and Document Summarization.

Department of Computer Science and Engineering, SUST

SYL, Bangladesh

Research Assistant

Sep 2017 - Aug 2022

- **Supervisor:** Professor Dr. M. Abdullah Al Mumin
- **Contributions:** Building an English-Bangla Parallel Corpus for Statistical Machine Translation.



Skills

Language: Python, C/C++, Java, SQL, MongoDB

Databases: SQLite, MySQL, MongoDB

Libraries/Frameworks: PyTorch, TensorFlow, Keras, Pandas, NumPy, Scikit-learn, Transformers

Tools: Git, Linux, LaTeX

Expertise: LLMs, NLP, Information Retrieval, ML, Structured Data Reasoning, Text-to-SQL, Data Analytics



Reference

1. **Davood Rafiei**
 - Professor, Computing Science, University of Alberta, Canada
 - Email: drafiei@ualberta.ca
2. **Yong Zhang**
 - Distinguished Researcher
 - Vancouver Big Data and AI platform Lab, Huawei Technologies Canada Co., Ltd.
 - Email: yong.zhang3@huawei.com
3. **Md. Saiful Islam**
 - Assistant Professor, Shahjalal University of Sci. and Tech., Bangladesh
 - Email: saiful-cse@sust.edu
4. **M. Shahidur Rahman**
 - Professor, Shahjalal University of Sci. and Tech., Bangladesh
 - Email: rahmanms@sust.edu