

# Md Mahadi Hasan Nahid

🏠 PhD student in Computing Science, University of Alberta, Canada.

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## 📖 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

2011–2016

**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**, 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]**
- [2] **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]**
- [3] **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 Foysal, 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 Ashraf 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 Davood Rafiei. "PRISM: Agentic Retrieval with LLMs for Multi-Hop Question Answering." arXiv preprint arXiv:2510.14278 (2025).
- [2] **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, EAACL 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

Faculty Member

SYL, Bangladesh

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

Member

SYL, Bangladesh

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

Research Coordinator, SUST NLP Lab

SYL, Bangladesh

Jan 2018 - Aug 2022

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

## Department of Computer Science and Engineering, SUST

Research Assistant

SYL, Bangladesh

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