Md Mahadi Hasan Nahid

Graduate Student in Computing Science, University of Alberta, Canada

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RESEARCH INTERESTS

Information Retrieval (IR), Natural Language Processing (NLP), Large Language Models (LLM)

EDUCATION

PhD in Computing Science, University of Alberta, Canada　　　　　Sep 2024 - Present

– **Research Area:** *Natural Language Processing and Complex Reasoning*

MSc (Thesis) in Computing Science, University of Alberta, Canada　　Sep 2022 - Aug 2024

– **GPA:** 4.00/4.00; **Thesis:** *Improving Table Reasoning through Table Decomposition and Normalization*

– **Achievements:** ***Alberta Innovates Graduate Student Scholarship (AIGSS), Sep 2023;*** *Alberta Graduate Excellence Scholarship (AEGS), Sep 2023; University of Alberta Graduate Recruitment Scholarship, Sep 2022*

BSc (Engg.) in CSE, Shahjalal Univ. of Sci. and Tech. (SUST), Bangladesh　　Jan 2011 - Dec 2015

– **GPA:** 3.82/4.00; **Class Position:** *1st / 54 Students*

– **Achievements:** *Vice Chancellor Award - 2020, Prime Minister Gold Medal - 2016*

SELECTED PUBLICATIONS

1. **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]*

2. **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]*

3. Shahrear, P., Rahman, S. S., & Nahid, M. M. H. (2021). Prediction and mathematical analysis of the outbreak of coronavirus (COVID-19) in Bangladesh. Results in Applied Mathematics, 10, 100145.

4. Foysal, T. A., Mahadi, M. A., Nahid, M. M. H., & Tasnim, A. (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. Azad, M. A., Singha, H. S., & Nahid, M. M. H. (2021, August). Zilla-64: A Bangla Handwritten Word Dataset Of 64 DistrictsName of Bangladesh and Recognition Using Holistic Approach. In 2021 International Conference on Science & Contemporary Technologies (ICSCT) (pp. 1-6). IEEE.

6. Sarker, S., Islam, M. E., Saurav, J. R., & Nahid, M. M. H. (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.

7. Azad, M. A., Singha, H. S., & Nahid, M. M. H. (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***)

8. Sarker, S., Monisha, S. T. A., & Nahid, M. M. H. (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. Monisha, S. T. A., Sarker, S., & Nahid, M. M. H. (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. Khan, S., Kubra, K. T., & Nahid, M. M. H. (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. Ritu, Z. S., Nowshin, N., Nahid, M. M. H., & 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. Nahid, M. M. H., Purkaystha, B., & Islam, M. S. (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. Nahid, M. M. H., Islam, M. A., & Islam, M. S. (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.

Conference Review

Subreviewer   **WSDM 2024, SIGIR 2023, CIKM 2023,** ICBSLP 2019, ICERIE 2019

Teaching and Research Experience

Associate Researcher (Intern), Huawei, Canada   Sep 2024 - present
– Data and Intelligence platform Lab, Vancouver

Graduate Teaching Assistant, University of Alberta, Canada   Sep 2022 - present
– **Course: CMPUT 291** - File and Database Management (F22, W23 and F23, W24)

Graduate Research Assistant Fellow, University of Alberta, Canada   May 2023 - Aug 2023
– Graduate Research Assistant Fellowship (GRAF), Summer 2023

Faculty Member, Shahjalal Univ. of Sci. and Tech. (SUST), Bangladesh   Sep 2017 - Aug 2022
– **Course:** OOP, Communication Engineering, Introduction to Computer Language

Research Coordinator, SUST NLP Lab   Jan 2018 - Aug 2022
– I collaborate research projects on Bangla QA and Bangla Document Summarization.

Research Assistant, Department of Computer Science and Engineering, SUST   Apr 2013 - Dec 2013
– **Supervisor:** *Professor Dr. M. Abdullah Al Mumin*
– **Contributions:** Building an English-Bangla Parallel Corpus for Statistical Machine Translation.

Other Experience

Core Member, Center for Research, Testing and Consultancy, CSE, SUST   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:** I helped the team with requirements engineering and designing the product's architecture.

Achievements and Awards

Alberta Innovates Graduate Student Scholarship (AIGSS)   Sep 2023 - Aug 2024
– Amount: $ 26000

Alberta Graduate Excellence Scholarship (AEGS)   Sep 2023 - Mar 2024
– Amount: $ 12000

Alberta Machine Intelligence Institute (Amii) Talent Bursary, Amii   2023
– Upperbound AI Conference, 2023

University of Alberta Graduate Recruitment Scholarship   Sep 2022
– Awarded by the University of Alberta for excellent academic background.

Runner Up Award - AIForBangla season 1   Feb 2022
– National project contest funded by Bangladesh gov. for Bangla NLP research.
– Awarded for creating 'SUST Bangla NLP Toolkit (SBNLTK)' as project mentor. [link]

Vice Chancellor Award - 2020   2020
– For exceptional academic performance and ranking as the top student in the School of Applied Sciences and Technology at SUST.

IEEE Honorable Mention Award, Awarded by CAICT Conference 2020   2020
– Our paper was one of the top 5 papers at this conference in the domain of NLP-ML.

Prime Minister Gold Medal - 2016   2018
– 141 students nationwide recognized for top marks in their faculties.[link (page-23)]

ICPC World Final Contest   2018 - 2019
– Beijing, China 2018: 56th Position, Participated as Co-trainer.
– Porto, Portugal 2019: Honorable Mention, Participated as Co-trainer.

University Scholarship from SUST   2012 - 2015
– Awarded by SUST, for achieving the best results for every academic year.

Bangladesh Government's Ministry of Education Scholarship   2011
– Received this scholarship for the academic result of the HSC Board Examination.

Selected Projects and Grants

A New Approach for Bengali Document Summarization   Aug 2020 - Jul 2021
– **Role:** Co-investigator; **Grant Amount:** BDT 175,000 (USD $ 2065)
– **Project Code:** AS/2020/1/30, SUST Research Center (2020-21)

Ankur: A VR based E-Learning application to train people with Autism   Aug 2019 - Jul 2020
– **Role:** Principle Investigator; **Grant Amount:** BDT 150,000 (USD $ 1700)
– **Project Code:** AS/2019/1/19, SUST Research Center (2019-20)

SUST Admission Chatbot   Aug 2018 - Jul 2019
– **Role:** Co-Investigator; **Grant Amount:** BDT 150,000 (USD $ 1700)
– **Project Code:** AS/2018/1/10, SUST Research Center (2018-19)

Skills

Language	Python, C/C++, Java, SQL, MongoDB
Frameworks	PyTorch, Tensorflow, Pandas, Keras
Utilities	Git, Jupyter Notebook, LaTex
Others	LLMs, Machine Learning, Data Analytics

Extra Curricular Activities

Undergraduate Student Mentor	Department of CSE, SUST (Sep 2021-Aug 2022)
Advisor	SUST ACM Student Chapter (Sep 2019-Aug 2022)
Program Committee Member	ICBSLP Conference (2018, 2019)
Organizer	SUST CSE Curnival (2018, 2019); SUST Techfest (2019)
Executive Member	CSE Alumni Association, SUST (2018-2021)