Md Mosharaf Hossain

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Education

University of North Texas *May 2019 - Aug 2022*
Ph.D., Computer Science and Engineering GPA: 4.0/4.0

Tennessee Tech University *Aug 2016 - Dec 2018*
M.Sc., Computer Science GPA: 4.0/4.0

Bangladesh University of Engineering and Technology *Dec 2004 - Oct 2009*
B.Sc., Computer Science and Engineering

Coursera.org *Aug 2017 - Apr 2018*
Deep Learning Specialization

Research Interests

Natural language understanding, information extraction, natural language generation, dialog systems, multilinguality, commonsense reasoning, artificial intelligence, and machine/deep learning

Publications

1. **Md Mosharaf Hossain**, Luke Holman, Anusha Kakileti, Tiffany Iris Kao, Nathan Raul Brito, Aaron Abraham Mathews, Eduardo Blanco. *A Question-Answer Driven Approach to Reveal Affirmative Interpretations from Verbal Negations.* To appear in the Findings of **NAACL 2022**.
2. **Md Mosharaf Hossain**, Dhivya Chinnappa, and Eduardo Blanco. *An Analysis of Negation in Natural Language Understanding Corpora.* To appear in the main conference of **ACL 2022**.
3. **Md Mosharaf Hossain**, Venelin Kovatchev, Pranoy Dutta, Tiffany Kao, Elizabeth Wei and Eduardo Blanco. *An Analysis of Natural Language Inference Benchmarks through the Lens of Negation.* In the Proceedings of **EMNLP 2020**.
4. **Md Mosharaf Hossain**, Antonios Anastasopoulos, Eduardo Blanco and Alexis Palmer. *It's not a Non-Issue: Negation as a Source of Error in Machine Translation.* In Findings of **EMNLP 2020**.
5. **Md Mosharaf Hossain**, Kathleen Hamilton, Alexis Palmer and Eduardo Blanco. *Predicting the Focus of Negation: Model and Error Analysis.* In the Proceedings of **ACL 2020**.
6. **Md Mosharaf Hossain**, Thomas M. Hines, Sheikh K. Ghafoor, Sheikh Rabiul Islam, Ramakrishnan Kannan, and Sreenivas R. Sukumar. *A flexible-blocking Based Approach for Performance Tuning of Matrix Multiplication Routines for Large Matrices with Edge Cases.* In BPOD workshop at **IEEE Big Data 2018**.
7. A. H. M. Jakaria, **Md Mosharaf Hossain**, and Mohammad Ashiqur Rahman. *Smart Weather Forecasting Using Machine Learning: A Case Study in Tennessee.* **Best Student Paper** at ACM Mid-Southeast Conference (2018).

Employment History

Graduate Research Assistant, CSE, UNT May 2019 - Current

· Research areas: natural language understanding, multilinguality, factuality, and commonsense reasoning

Sr. Engineer/Executive (Business Intelligence), GrameenPhone Ltd. Mar 2012 - Dec 2015

· Work areas: development of ETL and Machine Learning models (e.g., churn prediction, customer profiling)
· Received **Top Talent Employee** recognition in 2014 for notable performance

Software Engineer, Samsung Bangladesh R&D Center Nov 2010 - Feb 2012

· Work areas: development and integration of new features and functionalities to Samsung mobile platforms

Research Intern, Analytics and Machine Intelligence, Raytheon BBN May 2020 - Aug 2020

· Work areas: Information Extraction (e.g., events, arguments, and relation extraction)

Research Intern, ORISE, Oak Ridge National Lab May 2017 - Aug 2017

· Work areas: Computer Vision (time/memory analysis of CNNs (e.g., GoogleNet and ResNet) in HPC)

Technical Skills

Programming:	Python, C++, Java, R, Matlab, MPI, CUDA
Machine Learning	Neural Networks, SVM, PCA, BiLSTM, CNN, Transformers, etc.
Pre-trained models	ELMo, BERT, XLNet, RoBERTa, XLM-RoBERTa, mBERT, T5, etc.
ML Tools	PyTorch, Keras, TensorFlow

Open-Sourced Projects

1. **Focus of Negation Prediction**
   https://github.com/mosharafhossain/focus-of-negation
2. **Negation and Natural Language Inference**
   https://github.com/mosharafhossain/negation-and-nli
3. **Negation and Machine Translation**
   https://github.com/mosharafhossain/negation-mt
4. **Scope of Negation Prediction**
   https://github.com/mosharafhossain/scope-of-negation

Ongoing Research Projects

Negation and Affirmative Interpretation

· Every language contains negation, and the intelligent systems often have difficulty solving problems in instances containing negation. In this project, we explore how negation can be comprehended and propose a question-answer driven methodology to reveal the affirmative interpretations of negations.

Multilingual Negation

· We study the semantics and typological perspectives of negation in a wide range of languages. Our study further explores the possibilities of cross-lingual transfer of negation (e.g., zero-shot, few-shot, and projection) from one language to another.

Academic Services

1. Program committee: W-NUT 2021 (collocated with EMNLP 2021)
2. Reviewer: ACL Rolling Review (October 2021)
3. Reviewer: ACL Rolling Review (November 2021)
4. Reviewer: ACL Rolling Review (January 2022)
5. Student Volunteer: EMNLP 2021, ACM/IEEE Supercomputing Conference (2017)