Md Ashraful Islam

Amherst, MA, USA | mdashrafulis@umass.edu | +1 413 406 4368 | cseduashraful.github.io
linkedin.com/in/md-ashraful-islam-56759880/ | github.com/cseduashraful

Education

University of Massachusetts Amherst, PhD in Computer Science — Sep 2023 – Current

- **Advisor:** Marco Serafini
- **Project DART-GNN: Scalable ML training on large dynamic graphs** The project focuses on solving the problem of reduced accuracy in temporal GNNs when training with large batch sizes, caused by outdated memory updates. By creating smarter ways to group and process data, it aims to fix this issue and make training faster and more effective. This research improves both the speed and accuracy of machine learning on large, changing networks.
- **Project Relational Deep Learning.** The project focuses on developing a foundational model utilizing heterogeneous temporal GNN to automate relational database learning.

University of Dhaka, Master's in Computer Science — Jul 2016 – Dec 2017

- CGPA: 3.81 (Rank 1st)
- **Advisor:** Chowdhury Farhan Ahmed
- **Project: Weighted Substructure Mining from Transactional Graph Database** We created an efficient method for finding important patterns in weighted graphs by using a smart pruning technique to narrow down the search. We also extended it with DewgSpan, a tool that works well with graphs where the weights change over time. Both approaches are faster and more scalable than existing methods.

University of Dhaka, Bachelor's in Computer Science — Jan 2012 – Dec 2015

- CGPA: 3.89 (Rank 1st)
- **Awards:**
  - **Dean's Award 2015** from Faculty of Engineering and Technology, University of Dhaka.
  - **Prof. Dr. Md. Lutfar Rahman Award 2015** from Department of Computer Science and Engineering, University of Dhaka

Experience

Assistant Professor/Lecturer, University of Dhaka – Dhaka, Bangladesh — Sep 2019 – Aug 2023

Lecturer, East West University – Dhaka, Bangladesh — Apr 2018 – Aug 2019

Projects

Speech Synthesis in Bangla — 2022-2023

- Role: Co-PI
- Funded by University Grant Commission of Bangladesh
- Modules Developed: Diffusion based Text-to-Speech Model with Stochastic Duration Predictor (Platform - PyTorch, Python)

Bangla NLP Server — 2021-2022

- Role: Co-PI
- Funded by Centennial Research Grant of DU
- Modules Developed: Lemmatizer, Stemmer, Parts-of-Speech Tagger (Platform - PyTorch, Python)

Technologies

Languages: Python, C++, C, Java, SQL, JavaScript

Frameworks/Libraries: Pytorch, DGL, PyG, Cuda

Publications

- Weighted frequent sequential pattern mining
  ***Md Ashraful Islam**, Mahfuzur Rahman Rafi, Al-amin Azad, Jesan Ahammed Ovi*, **Applied Intelligence, Springer, 2021**
- UGMINE: Utility Based Graph Mining
  Md. Tanvir Alam, Amit Roy, Chowdhury Farhan Ahmed, ***Md Ashraful Islam**, Carson K. Leung*, **Applied Intelligence, Springer, 2022**
- Graph-based Substructure Pattern Mining with Edge-Weight
  ***Md Ashraful Islam**, Chowdhury Farhan Ahmed , Carson K. Leung, Md. Tanvir Alam*, **Applied Intelligence, Springer, 2024**
- BaNeL: an encoder-decoder based Bangla neural lemmatizer
  ***Md Ashraful Islam**, Md Towhiduzzaman, Md Bhuiyan, Tauhidul Islam, Abdullah Al Maruf, Jesan Ahammed Ovi*, **SN Applied Sciences, Springer, 2022**
- BaNeP: An End-to-End Neural Network Based Model for Bangla Parts-of-Speech Tagging
  Jesan Ahammed Ovi, ***Md Ashraful Islam**, Md Rezaul Karim*, **IEEE Access, 2022**
- WFSM-MaxPWS: an efficient approach for mining weighted frequent subgraphs from edge-weighted graph databases
  ***Md Ashraful Islam**, Chowdhury Farhan Ahmed, Carson K Leung, Calvin SH Hoi*, **PAKDD, 2018**
- Mining High Utility Subgraphs
  Md Tanvir Alam, Amit Roy, Chowdhury Farhan Ahmed, ***Md Ashraful Islam**, Carson K Leung*, **ICDM Workshops,2021**

Google Scholar: https://scholar.google.com/citations?user=UD5-rcAAAAAJ&hl