

Farhan Tanvir

Lecturer, Department of Computer Science, College of Arts & Sciences, Georgia State University

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Education

Oklahoma State University (OSU)

Aug 2019 - Dec 2023

PhD, Computer Science, 3.83/4.00

Stillwater, Oklahoma

Relevant coursework: Machine Learning, Big Data Management, Big Data Analytics, Data Structures and Algorithms Analysis 2.

Islamic University of Technology (IUT)

Jan. 2012 - Dec. 2015

Bachelor of Science in Computer Science and Engineering,

Dhaka, Bangladesh

Relevant coursework: Calculus (I-IV), Data Structures and Algorithms, Introduction to Database Management Systems, Machine Learning, Relational Database Management System.

Professional Credentials

Lecturer

Aug 2023 -

Department of Computer Science, Georgia State University

Atlanta, Georgia

- Teach core Computer Science Courses, including Data Structures and Database Systems, in junior and senior classes.

Graduate Research and Teaching Assistant

Aug 2019 - Jul. 2023

Oklahoma State University

Stillwater, Oklahoma

- Authored a paper on DDI prediction, which is accepted in IEEE CIBCB 2021. Tasks include collecting, analyzing and interpreting large datasets, developing machine learning models and performing data management tasks.
- Conducting a study on DDI prediction using heterogeneous graph neural networks, a critical issue and a major driver of drug related death in US.
- Conducting a study on Using Precision Medicine for Safe Drug Recommendation using heterogeneous graph neural networks.
- Taught discrete math, database management and C/C++ programming in a freshman and sophomore class containing 50+ students.

Software Engineer

Jul. 2018 - Jul. 2019

Impulse (BD) Ltd

Dhaka, Bangladesh

- Developed 40% of two modules (payment, payment refund) of Event Management System built in ASP.NET.
- Communicated with clients of foreign companies for 1 year which enhanced communication skill.

Software Developer

Apr. 2016 - Jul. 2018

DataSoft Systems Bangladesh Ltd

Dhaka, Bangladesh

- Implemented 10% of ERP solution (consisting of 26 modules) built in ASP.NET MVC and entity frameworks resulting in \$15000 funding and bonus from BIGM. Project website: <http://www.bigm.edu.bd>
- Performed various tasks including developing dashboard for data visualization, CMS and website, testing software, supervising subordinates in designated task and maintain stakeholder's interaction.

Publications

Journal Papers

- **Farhan Tanvir**, Khaled Mohammed Saifuddin, Muhammad Ifta Khairul Islam, and Esra Akbas, "Meta-Path Based Approach for DDI Prediction", *IEEE/ACM Transactions on Computational Biology and Bioinformatics (TCBB)*. **2024**
- Muhammad Ifta Khairul Islam, **Farhan Tanvir**, Ginger Johnson, Esra Akbas and Mehmet Emin Aktas, "Proximity-Based Compression for Network Embedding", *Frontiers in Big Data*, 2020.
DOI: 10.3389/fdata.2020.608043 **2020**

Conference Papers

- **Farhan Tanvir**, Khaled Mohammed Saifuddin, Tanvir Hossain, Arunkumar Bagavathi, and Esra Akbas. "HeTAN: Heterogeneous Graph Triplet Attention Network for Drug Repurposing." *The 11th IEEE International Conference on Data Science and Advanced Analytics (DSAA 2024)*. **2024**

- Tanvir Hossain, Khaled Mohammed Saifuddin, Muhammad Ifte Khairul Islam, **Farhan Tanvir**, and Esra Akbas. "Tackling Oversmoothing in GNN via Graph Sparsification." *European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases 2024 (ECML PKDD)*.
- Saifuddin, Khaled Mohammed, Corey May, **Farhan Tanvir**, Muhammad Ifte Khairul Islam and Esra Akbas. "Seq-HyGAN: Sequence Classification via Hypergraph Attention Network." *32nd ACM International Conference on Information and Knowledge Management (CIKM)*.
DOI: **10.1145/3583780.3615057** **2023**
- **Tanvir, Farhan**, Khaled Mohammed Saifuddin, Muhammad Ifte Khairul Islam and Esra Akbas. "Predicting Drug-drug Interactions Using Heterogeneous Graph Attention Networks." *Proceedings of the 14th ACM International Conference on Bioinformatics, Computational Biology, and Health Informatics (BCB)*.
DOI: **10.1145/3584371.3613065**
- **Farhan Tanvir**, Khaled Mohammed Saifuddin, and Esra Akbas, "DDI Prediction via Heterogeneous Graph Attention Networks", *21st International Workshop on Data Mining in Bioinformatics (BIOKDD)*.
DOI: **2207.05672** **2022**
- Khaled Mohammed Saifuddin, **Farhan Tanvir**, and Esra Akbas, "HyGNN: Drug-Drug Interaction Prediction via Hypergraph Neural Network", *IEEE International Conference in Data Engineering (ICDE)*.
DOI: **2206.12747**
- **Farhan Tanvir**, Muhammad Ifte Khairul Islam, and Esra Akbas, "Predicting Drug-Drug Interactions Using Meta-path Based Similarities", *2021 IEEE Conference on Computational Intelligence in Bioinformatics and Computational Biology (CIBCB)*, Melbourne, Australia, 1–6 (2021).
DOI: **10.1109/CIBCB49929.2021.9562802** **2021**
- Bri Bumgardner, **Farhan Tanvir**, Khaled Mohammed Saifuddin and Esra Akbas, "Drug-Drug Interaction Prediction: a Purely SMILES Based Approach", *IEEE International Conference on Big Data 2021 (Big Data)*.
DOI: **10.1109/BigData52589.2021.9671766**

Teaching

Courses Taught

- Data Structures and Algorithms
- Database Systems
- Data Mining

Service

Academic Service

Reviewer for the following academic journals and conferences

- IEEE Transactions on Neural Networks and Learning Systems
- NeurIPS 2023- AI4Science Workshop
- NeurIPS 2023 Generative AI & Biology Workshop
- IEEE Journal of Biomedical and Health Informatics

University Service

- GSU Department of Computer Science Adhoc Committee, 2023-2024