MD. TANVIR ALAM

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EDUCATION

Master of Science *2020 - 2022*
Department of Computer Science and Engineering, University of Dhaka, Bangladesh
GPA: 4.00/4.00 (Ranked 1^{st})

Bachelor of Science *2016 - 2019*
Department of Computer Science and Engineering, University of Dhaka, Bangladesh
GPA: 3.96/4.0 (Ranked 1^{st})

TEACHING EXPERIENCE

Lecturer *2023-Present*
Department of Computer Science and Engineering, University of Dhaka, Bangladesh.
Courses Taught: Data Structures and Algorithms, Numerical Methods, Multivariable Calculus and Geometry, Fundamentals of Programming Lab, Application Development Lab.

Lecturer *2022-2023*
Department of Computer Science and Engineering, East West University, Bangladesh.
Courses Taught: Web Programming, Advanced Database Systems, Computer Architecture, Object Oriented Programming.

PUBLICATIONS

• **Alam, M. T.**, Alam, M. A., Rahman, M. M., Khan, M. M. (2025). Rel-HNN: Split Parallel Hypergraph Neural Network for Learning on Relational Databases. Transactions on Machine Learning Research **(TMLR)** 2025.

• **Alam, M. T.**, Ahmed, C. F., Leung, C. K. (2024). Hyperedge Anomaly Detection with Hypergraph Neural Network. Under Review. **[Preprint]**

• **Alam, M. T.**, Ahmed, C. F., Samiullah, M., Leung, C. K. (2023, January). Discovering Interesting Patterns from Hypergraphs. ACM Transactions on Knowledge Discovery from Data **(ACM TKDD)**, 18(1), (pp. 1-34).

• **Alam, M. T.**, Roy, A., Ahmed, C. F., Islam, M. A., Leung, C. K. (2021, December). Mining High Utility Subgraphs. International Conference on Data Mining **(ICDM)** Workshop on Utility Driven Mining and Learning (pp. 566-573). IEEE.

• **Alam, M. T.**, Ahmed, C. F., Samiullah, M., Leung, C. K. (2021, May). Discriminating frequent pattern based supervised graph embedding for classification. In Pacific-Asia Conference on Knowledge Discovery and Data Mining **(PAKDD)** (pp. 16-28). Springer, Cham.

• **Alam, M. T.**, Ahmed, C. F., Samiullah, M., Leung, C. K. (2021, May). Mining frequent patterns from hypergraph databases. In Pacific-Asia Conference on Knowledge Discovery and Data Mining **(PAKDD)** (pp. 3-15). Springer, Cham.

• **Alam, M. T.**, Roy, A., Ahmed, C. F., Islam, M., Leung, C. K. (2022). UGMINE: utility-based graph mining. Applied Intelligence, Vol. 53 (pp. 4968).

• Islam, M. A., Ahmed, C. F., **Alam, M. T.**, Leung, C. K. (2024). Graph-based substructure pattern mining with edge-weight. Applied Intelligence, 54(5), 3756-3785.

RESEARCH EXPERIENCE

Research Assistant, Regional Collaborations Programme, Australian Academy of Science *2021-2022*
Project title: Geo-spatial transfer learning based rumour-spreading trend analysis to detect fake news about COVID-19 and the effects of its vaccines
- Developed an algorithm for analyzing information-spreading trends presented as edge-ordered graphs
- Assessed the performance of the algorithm by conducting experimental analysis on data sets
- Collaborated with co-authors to prepare a manuscript for publication

Research Assistant, Brown University, United States *2021*
Project title: Making Meaning of Gendered Violence and the Law: Global Discourses and Local Realities in Bangladesh.
- Constructed a corpus for textual analysis of gendered violence in Bangladesh
- Devised and applied a technique for cleaning topic-wise text data from numerous sources

Research Assistant, Department of ICT, Ministry of PTIT, Bangladesh. *2020-2021*
Project title: DrAi: Artificial Intelligence and Pattern Recognition Driven Assistant for Providing Effective Treatment
- Supervised the development team of the software system
- Designed the machine learning pipeline, conducted data collection, model development, and deployment
- Collaborated in preparing manuscripts for publication and project reports

Research Assistant, Data Mining Research Group, Department of CSE, University of Dhaka *2021-2022*
Project title: Developing Efficient Technique to Detect False Facts Using Knowledge Graph and Bayesian Network-Based Models
- Developed an algorithm for mining features from knowledge graphs and performed experimental analysis

AWARDS

Deans Award, awarded by the Faculty of Engineering and Technology, University of Dhaka, in recognition of outstanding academic achievement in Bachelor of Science with honors. *2022*

Azfar Alam Memorial Gold Medal, awarded by the University of Dhaka for obtaining the highest CGPA in the Bachelor of Science examination of 2019. *2022*

Talentpool Scholarship, awarded by the Directorate of Secondary and Higher Education, Government of Bangladesh, for obtaining the highest CGPA in the Bachelor of Science examination. *2022*

ACHIEVEMENTS

Champion, Code Samurai Inter-University Hackathon *2019*
- A day-long inter-university hackathon organized by a Bangladesh-Japan venture company, BJIT Limited
- A total of 34 teams participated in the hackathon
- Developed a solution for automated traffic management in Dhaka city based on real data

Winner, Student to Startup, Chapter 2 *2019*
- A startup pitch competition organized by the ICT Division, Bangladesh
- Pitched and developed an image search-based solution for fashion product search engine

GRANTS

Master's Fellowship *2020*
- A fellowship worth 3,30,000 BDT, awarded by ICT Innovation Fund, ICT Division, Bangladesh
- For conducting master's thesis research work titled "*Hypergraph Mining Methodologies*"

Bangabandhu Innovation Grant *2019*
- A grant worth BDT 1 million was awarded by Startup Bangladesh Limited