

Amit Roy

Lafayette, Indiana, USA

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in amitroy7781

🔗 google scholar

🔗 amitroy7781.github.io

Education

Purdue Univeristy

PhD Student in Computer Science

Current CGPA: 4.0/4.0

West Lafayette, Indiana, USA

August 2022 - Present

Univeristy of Dhaka

B.Sc in Computer Science and Engineering

CGPA: 3.96 out of 4.00 (Class Rank: 1st out of 65 students)

Thesis Topic: Utility-based Graph Mining

Advisor: Dr. Chowdhury Farhan Ahmed

Dhaka, Bangladesh

January 2016 - January 2020

Professional Experience

Artificial Intelligence and Cybernetics Lab (AGenCy Lab)

Research Assistant - Machine Learning on Graphs

Developed GNN-based models for spatial-temporal traffic forecasting, node classification and graph classification, supported by ICT Division, Government of Bangladesh.

Advisors: Dr. Amin Ahsan Ali and Dr. AKM Mahbubur Rahman.

Dhaka, Bangladesh

February 2020 - June 2022

Tiger IT Bangladesh Ltd.

Software Engineer - Machine Learning

Worked as a backend developer on applied computer vision projects from real-time video data e.g. Automatic Number Plate Recognition and object detection and deep fake-based face animation generation using First-Order-Motion Model.

Dhaka, Bangladesh

December 2020 - August 2022

Publications

Unified Spatio-Temporal Modeling for Traffic Forecasting using GNN

April 2021

Amit Roy*, Kashob Kumar Roy*, Amin Ahsan Ali, M Ashraful Amin and A K M Mahbubur Rahman

The International Joint Conference on Neural Networks (IJCNN-2021) [[Paper](#)] [[Code](#)]

SST-GNN: Simplified Spatio-temporal Traffic forecasting model using Graph Neural Network

February 2021

Amit Roy*, Kashob Kumar Roy*, Amin Ahsan Ali, M Ashraful Amin and A K M Mahbubur Rahman

The 25th Pacific-Asia conference on Knowledge Discovery and Data Mining (PAKDD-2021) [[Paper](#)] [[Code](#)]

Node Embedding using Mutual Information and Self-Supervision based Bi-level Aggregation

April 2021

Kashob Kumar Roy*, Amit Roy*, Amin Ahsan Ali, M Ashraful Amin and A K M Mahbubur Rahman

The International Joint Conference on Neural Networks (IJCNN-2021) [[Paper](#)] [[Code](#)]

Structure-Aware Hierarchical Graph Pooling using Information Bottleneck

April 2021

Kashob Kumar Roy*, Amit Roy*, Amin Ahsan Ali, M Ashraful Amin, and A K M Mahbubur Rahman

The International Joint Conference on Neural Networks (IJCNN-2021) [[Paper](#)] [[Code](#)]

Mining High Utility Subgraphs

September 2021

Md. Tanvir Alam, Amit Roy, Chowdhury Farhan Ahmed, Md. Ashraful Islam, Carson K. Leung

UDML 2021: 4th Workshop on Utility Driven Mining and Learning @ ICDM 2021 [[Paper](#)]

UGMINE: Utility-based Graph Mining

February 2022

Md. Tanvir Alam, Amit Roy, Chowdhury Farhan Ahmed, Md. Ashraful Islam, Carson K. Leung

Applied Intelligence Journal, Impact Factor: 5.086 [[Paper](#)]

* Equal Contribution

Academic Projects

Reproducing "Taking a long look at QUIC"

August 2022 - December 2022

Performed file download latency and fairness comparison between two transport layer protocols QUIC and TCP. [[Github](#)] [[Demo Video](#)]

interviewGeek : An online interview platform

January 2019 - June 2019

Developed a real-time mock interview platform with online IDE, user profiles, and personalized feeds. [[Github](#)]

cricHUB : A website for cricket news updates

July 2018 - November 2018

Developed cricket-based website with live scores, cricket news, match predictors, player and tournament statistics. [[Github](#)]

uRECO: Web project for online gesture recognition

January 2018 - June 2018

Developed web application for real-time image processing tasks: sentiment detection from facial expression, digit recognition from hand gestures of American Sign Language (ASL), and on-screen keyboard with fingertip usage. [[Github](#)] [[Demo Video](#)]

iGest Recognito : Mobile App for sign language based communication

July 2017 - November 2017

Developed an android application as a communication medium between regular text messaging and sign language, awarded as the Champion at **DUITS-ROBI National IT Fest, 2018** ([Results](#)) and presented as a poster in **International conference on Emerging technologies in data Mining and Information Security(IEMIS)**, 2018 in Kolkata, India. [[Github](#)] [[Demo Video](#)] [[Poster Link](#)]

Technical Skills

Programming Languages:	Python, C++, C, Java
Data Science Tools:	PyTorch, NumPy, Scikit-Learn, Matplotlib, NetworkX, OpenCV
Web Development:	FrontEnd - HTML, JavaScript BackEnd - Flask, MySQL, MongoDB
Miscellaneous:	Git, \LaTeX

Coursework and Problem Solving

- **Core Courses:** Linear Algebra, Introduction to Probability and Statistics, Mathematical and Statistical Analysis for Engineers, Artificial Intelligence, Data Mining, Statistical Machine Learning, Deep Learning, Machine Learning on Graphs, Natural Language Processing
- **MOOC Courses:** Machine Learning, Coursera [[Certificate](#)], Neural Networks and Deep Learning, Coursera [[Certificate](#)], Structuring Machine Learning Projects, Coursera [[Certificate](#)] Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization, Coursera [[Certificate](#)] Build Basic Generative Adversarial Networks (GANs), Coursera [[Certificate](#)]
- Solved 1000+ problems in different Online Judges including Codeforces, Codechef, UVA.
- Reached Expert (Rating 1640) in Codeforces and 5* (Rating 2160) in Codechef, username: *amitroy7781*.

Awards

- July 2022: "**University Grants Commission of Bangladesh Scholarship**" for holding the first position in the Bachelor of Science Examination of 2019 in the Faculty of Engineering and Technology, University of Dhaka [[Certificate](#)]
- September 2022: "**Professor Dr. M. Lutfur Rahman Award**" for securing the highest CGPA in the Bachelor of Science Examination of 2019 in the Department of Computer Science and Engineering, University of Dhaka. [[Certificate](#)]

References

Dr. Amin Ahsan Ali Associate Professor Department of Computer Science and Engineering Independent University, Bangladesh Email: aminali@iub.edu.bd	Dr. Chowdhury Farhan Ahmed Professor Department of Computer Science and Engineering University of Dhaka, Bangladesh Email: farhan@du.ac.bd
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