Md Iftekharul Islam

+1 (929) 686-5090 mislam73@vols.utk.edu iftekharcs.github.io LinkedIn

Education

University of Tennessee • Knoxville, TN 2024 – Present
Ph.D. in Computer Science • Ongoing
M.S. in Computer Science • May 2025 • GPA: 4.0/4.0

Rajshahi University of Engineering & Technology • Rajshahi, Bangladesh 2014 – 2018
B.S. in Computer Science & Engineering • GPA: 3.76/4.0

Publications

- **I. Islam**, C. Raskoti, F. Liu, W. Li. "Large-Scale Traffic Co-Simulation from GIS Data." *In Submission.*
- **I. Islam**, F. Liu, W. Li. "Multi-Objective Reinforcement Learning for Large-Scale Mixed Traffic Control." *In Submission.* [Paper]
- **I. Islam**, W. Li, X. Wang, S. Li, K. Heaslip. "Heterogeneous Mixed Traffic Control and Coordination." *IEEE/RSJ IROS*, 2025. [Paper]
- S. Sarker, **I. Islam**, B. Poudel, W. Li. "Beacon: A Naturalistic Driving Dataset During Blackouts for Benchmarking Traffic Reconstruction and Control." *IEEE/RSJ IROS*, 2025. [Paper]
- C. Raskoti, **I. Islam**, X. Wang, W. Li. "MIAT: Maneuver-Intention-Aware Transformer for Spatio-Temporal Trajectory Prediction." *IEEE/RSJ IROS*, 2025. [Paper]
- J. Pan, W. Li, W. Liu, **I. Islam**, K. Guo, Y. Yang, S. Zhang, X. Ji, D. Wang. "Mixed Crowd Navigation: Perception, Interaction, Planning, and Control." *Annual Review of Control, Robotics, and Autonomous Systems*, Vol. 9, 2025. [Paper]

Projects

Large-Scale Mixed Traffic Control Using RL and Strategic Routing *(Research Project)*

- Designed a hierarchical RL+routing framework for coordinating robot vehicles across an 18-intersection real-world network, reducing average wait times by up to 53% and maximum starvation by up to 86%.
- Skills: PyTorch, SUMO, Multi-agent RL, Network Routing.

Heterogeneous Mixed Traffic Control and Coordination *(Research Project)*

- Implemented reinforcement learning framework for coordinating diverse vehicle types at complex intersections with real-world data, achieving 86% reduction in waiting times.
- Skills: PyTorch, SUMO, Reinforcement Learning, Traffic Simulation.

AI Code Detection *(Software Engineering Course Project)*

- Evaluated DetectCodeGPT for distinguishing AI-generated from human-written code across programmer experience levels, achieving AUROC of 0.72 on professional code but 0.47 on student submissions.
- Skills: PyTorch, Machine Learning, Statistical Analysis.

Subspace Detection for Hyperspectral Image Classification *(Bachelor Thesis)*

- Developed feature extraction method combining Folded-PCA and Cross Cumulative Residual Entropy for hyperspectral image classification with improved accuracy over existing approaches.
- Skills: MATLAB, Machine Learning, Hyperspectral Imaging.

Teaching Experience

Graduate Teaching Assistant 2023 – Present

- COSC 423/523 - Artificial Intelligence (University of Tennessee – Fall 2025).
- COMP 4030 - Design and Analysis of Algorithms (University of Memphis – Fall 2023).
- Delivered guest lectures for *Reinforcement Learning* course.
- Led lab sessions for *Intelligent Transportation Systems* and *Computer Graphics* courses.

Lecturer 2019 – 2023
Bangladesh University, Dhaka, Bangladesh

- Taught courses on *Algorithm Design*, *Data Structures*, *Database Systems*, *Structural Programming* and *Computer Architecture*.
- Served as assistant coordinator on the committee developing undergraduate Computer Science curriculum.

- Mentored undergraduate student projects.

Professional Development

- **Machine Learning Specialization**, Stanford Online & DeepLearning.AI
- **Certificate in Teaching Methods**, Graduate Training Institute, Bangladesh Agricultural University

Awards & Honors

- University Merit Scholarship (2014–2018)