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Md Asifur Rahman

Education

Jan/2022 to Dec/2023 **(Expected)** **Master of Science in Computer Science**,
Wake Forest University (WFU), North Carolina, USA,
Dissertation title: *Task-Agnostic Safe Reinforcement Learning* .

Feb/2012 to Oct/2016 **Bachelor of Science in Computer Science & Engineering**,
Rajshahi University of Engineering & Technology (RUET), Bangladesh,
CGPA: 3.74 out of 4.00 (Position: 4th out of 56)
Dissertation title: *An adaptive background modeling based on modified running Gaussian average method* .

Professional Experience

Jan/2022 to Present **Graduate Research Assistant**,
Wake Forest University, North Carolina, USA,
Supervisor: Dr. Sarra Alqahtani.

May/2022 to Aug/2022 **Test Engineering Intern**,
Qorvo, Greensboro, USA ,
Manager: Lance Bennett.

May/2021 to Dec/2021 **Assistant Professor (Currently on study leave)**,
Department of Computer Science,
Rajshahi University of Engineering & Technology (RUET),
Rajshahi, Bangladesh.

July/2017 to May/2021 **Lecturer**,
Department of Computer Science,
Rajshahi University of Engineering & Technology (RUET),
Rajshahi, Bangladesh.

Jan/2017 to April/2021 **Lecturer**,
Department of Software Engineering,
Daffodil International University (DIU),
Dhaka, Bangladesh.

Skills

Programming Language: Python, C, C++, Java, Swift 2, Javascript, PHP

Tech/Tools: PyTorch, Tensorflow, SciPy, Scikit-learn, Numpy, Pandas, Keras, RLlib, Ray Tune, W&B, Open MPI, Regex, Git, Bootstrap, Django, Laravel, API, AWS, cPanel, LaTeX, Matlab, Smartsheet, MS Office Applications, Jira, Figma, Mural, Balsamiq, Qualtrics

Operating System: OSx, Linux, Windows, Ubuntu

Database: SQL, MySQL, MongoDB

Data Mining/ML: Regression, Classification, Parallel-SGD, Exploratory Data Analysis, Clustering, Association Rule Mining

Deep Learning: Deep Neural Network, Convolutional neural network, Generative Network, Transformer Model

Reinforcement Learning: Single and Multi-agent systems (MDP, CMDP, POMDP, IMDP), Safe Reinforcement Learning, Multi-armed bandits, Contextual Bandits, Behavior Cloning, Inverse Reinforcement Learning

Research Interest

Safe Reinforcement Learning, explainable Reinforcement Learning (XRL), explainable AI (XAI), ML Stability & Fairness

Publications

2023 **Md Asifur Rahman**, Tongtong Liu, Sarra Alqahtani "Adversarial Behavioral Exclusion for Safe Reinforcement Learning", *32nd International Joint Conference on Artificial Intelligence (IJCAI 2023)*.

2023 Tongtong Liu, Joe McCalmon, Thai Le, **Md Asifur Rahman,** Dongwon Lee, Sarra Alqahtani "A novel policy-graph approach with natural language and counterfactual abstractions for explaining reinforcement learning agents Authors", *Autonomous Agents and Multi-Agent Systems* .

2022 Tongtong Liu, Joe McCalmon , **Md Asifur Rahman,** Cameron Lischke, Talal Halabi , Sarra Alqahtani "Weaponizing Actions in Multi-Agent Reinforcement Learning: Theoretical and Empirical Study on Security and Robustness", *International Conference on Principles and Practice of Multi-Agent Systems (PRIMA 2022)*.

2022 Bodrunnessa Badhon, Mir Md. Jahangir Kabir , **Md Asifur Rahman,** Shuxiang Xu "SQ-FMFO: A Novel Scalarized Multi-Objective Q-Learning Approach for Fuzzy Membership Function Optimization", *International Journal of Fuzzy Systems*.

2022 Cameron Lischke, Tongtong Liu, Joe McCalmon , **Md Asifur Rahman,** Talal Halabi , Sarra Alqahtani "LSTM-Based Anomalous Behavior Detection in Multi-Agent Reinforcement Learning", *International Conference on Cyber Security and Resilience (CSR)*.

2021 Apu Chandraw Shill, **Md Asifur Rahman,** "Plant Disease Detection Based on YOLOv3 and YOLOv4",, *International Conference on Automation, Control and Mechatronics for Industry 4.0 (ACMI 2021)*.

2017 **Md Asifur Rahman**, Boshir Ahmed, Md Ali Hossian, and Md Nazrul Islam Mondal, "An adaptive background modeling based on modified running gaussian average method", *International Conference on Electrical, Computer and Communication Engineering (ECCE)*.

Projects (asifurrahman1)

Qorvo: Python-based Code Generator for Dimondx Tester and Pattern Library Extension for Ultra Wide Band Pattern.

Qorvo: Test Request Management System.

WFU: AdvEx-RL: Adversarial Behavior Exclusion for Safe Reinforcement Learning.

WFU: Implementation and Analysis of Communication Avoidance in Stochastic Gradient Descent (SGD).

WFU: Pointwise Model Instability Approximation.

Review Activities

2023 PC member, Thirty-Eighth AAAI Conference on Artificial Intelligence (AAAI-24)

Leadership Experience

2020 to 2021 Thesis supervision of Apu Chandraw Shill

2018 to 2021 Focal Point of the Department of Computer Science & Engineering, RUET.

2018 to 2021 Assistant Director, Mobile Games and Application Development Lab, RUET.

2017 to 2021 Course Advisor of 62 Undergraduate Student.

2017 to 2021 Treasurer, Dhaka Nibash Somiti (Community Organization), RUET, Bangladesh.

Referees

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Department of Computer Science,
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