

Md Asifur Rahman

Education

- Jan/2022 **Master of Science in Computer Science,**
to Wake Forest University (WFU), North Carolina, USA,
Dec/2023 **Dissertation title:** Task-Agnostic Safe Reinforcement Learning .
(Expected)
- Feb/2012 **Bachelor of Science in Computer Science & Engineering,**
to Rajshahi University of Engineering & Technology (RUET), Bangladesh,
Oct/2016 **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 **Graduate Research Assistant,**
to Wake Forest University, North Carolina, USA,
Present **Supervisor:** Dr. Sarra Alqahtani.
- May/2022 **Test Engineering Intern,**
to Qorvo, Greensboro, USA ,
Aug/2022 **Manager:** Lance Bennett.
- May/2021 **Assistant Professor (Currently on study leave),**
to Department of Computer Science,
Dec/2021 Rajshahi University of Engineering & Technology (RUET),
Rajshahi, Bangladesh.
- July/2017 **Lecturer,**
to Department of Computer Science,
May/2021 Rajshahi University of Engineering & Technology (RUET),
Rajshahi, Bangladesh.
- Jan/2017 **Lecturer,**
to Department of Software Engineering,
April/2021 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, L^AT_EX, 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 new 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

Dr. Sarra Alqahtani

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Department of Computer Science,
Wake Forest University,
Winston-Salem, North Carolina, USA.*

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Dr. Boshir Ahmed

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Lance Bennett

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