Farhad Mohsin

✉ mohsif@rpi.edu | farhadmohsiniiii@gmail.com   📞 +1 (929) 326 3850
✉ 213 Hoosick St, Apt 2R, Troy, NY-12180
⬡ https://github.com/farhadmohsin
🌐 https://scholar.google.com/citations?user=Akfw1iQAAAAJ
🌐 https://farhadmohsin.github.io

Summary

PhD student doing research in preference aggregation, fair decision-making in ML and reinforcement learning with experience as telecommunications engineer and data analyst.

Education

2018 – Present	**Ph.D. student in Computer Science**, expected graduation in December 2023 Rensselaer Polytechnic Institute (RPI), Troy, NY
2010 – 2015	**B.Sc. in Electrical and Electronic Engineering** Bangladesh University of Engineering and Technology (BUET), Bangladesh

Experience

Aug 2018 - Present	**Dept. of Computer Science, Rensselaer Polytechnic Institute** *Graduate Research Assistant.* Advised by Prof. Lirong Xia. Working on AI-aided group decision making. • ML-based design of new voting rules for fair and ethical decision-making. • Learning and aggregating preferences from natural language. *Graduate Teaching Assistant* Data Structures (Fall 2018) Introduction to Artificial Intelligence (Spring 2021, Spring 2022).
Sep 2015 - Aug 2018	**Grameenphone Ltd, Dhaka, Bangladesh** *Telecommunications Engineer* at Service Assurance and Security • Worked in modernization of resource planning, auditing and reporting by introducing efficient database management and data analysis using SQL and Python. • Developed new algorithms using standard machine learning techniques to do efficient fault detection in high dimensional Radio Access Network data.

Research Publications

Journal and Conference Papers

1. **Mohsin, F.**, Han, Q., Ruan, S., & Xia, L. (2023). Computational Complexity of Verifying the Group No-show Paradox. *AAMAS-23.*

2. **Mohsin, F.**, Liu, A., Chen, P.-Y., Rossi, F., & Xia, L. (2022). Learning to Design Fair and Private Voting Rules. *JAIR (75).*

3. Liu, S., **Mohsin, F.**, Xia, L., & Seneviratne, O. (2019). Strengthening Smart Contracts to Handle Unexpected Situations. *DAPPCON-19.*

4. Hasan, S. M., Monjil, M. B., **Mohsin, F.**, Hayat, M. A., & Rashid, A. B. M. H.-u. (2015). Adaptive Beamforming with a Microphone Array. *ICCIT-15.*

Workshop Papers and Ongoing Work

5. **Mohsin**, **F.**, Kang, I., Chen, Y., Shang, J., & Xia, L. (2023). Dependency and Coreference-boosted Multi-Sentence Preference model. *DLG-AAAI-23 workshop*.

6. Lin, J. C., **Mohsin**, **F.**, Bhamidipati, S., & Xia, L. (2023). Generating Election Data Using Deep Generative Models. *AI4SG workshop at AAAI-23*.

7. **Mohsin**, **F.**, Kang, I., Chen, P.-Y., Rossi, F., & Xia, L. (2022). Learning Individual and Collective Priorities over Moral Dilemmas. *MPREF-22 workshop, IJCAI*.

8. **Mohsin**, **F.**, Luo, L., Ma, W., Kang, I., Zhao, Z., Liu, A., Vaish, R., & Xia, L. (2021). Making Group Decisions from Natural Language-Based Preferences. *COMSOC-21*.

9. **Mohsin**, **F.**, Zhao, X., Hong, Z., de Mel, G., Xia, L., & Seneviratne, O. (2019). Ontology Aided Smart Contract Execution for Unexpected Situations. *BlockSW-19, ISWC*.

10. Han, Q., Ruan, S., Kong, Y., Liu, A., **Mohsin**, **F.**, & Xia, L. (2021). Truthful Information Elicitation from Hybrid Crowds. *arXiv preprint arXiv:2107.10119*.

Skills

Programming	**Python**: Data analysis: NumPy, SciPy, Pandas. Optimization: CVXOPT, CVXPy, Gurobi. ML libraries: scikit-learn, PyTorch, PyTorch Geometric, HuggingFace Transformers, XG-Boost, Stable Baselines3. **C/C**++: C,C++ with STL **MPI**: Parallel programming done using MPI in C **Databases**: SQLite with Python. **MATLAB, R**: Used for projects in optimization and statistical analysis
Misc.	MS Excel (Macros, VBA), MS PowerPoint, LATEX .

Miscellaneous Experience

Relevant Coursework

Graduate	Machine Learning from Data, Randomized Algorithms, Distributed Systems and Algorithms, Design and Analysis of Algorithms, Algorithmic Game Theory, Economics and Computation, Introduction to Optimization, Parallel Computing.

Awards and Achievements

Programming Contests	Participated in numerous National Collegiate Programming Contests as one of the top teams from BUET in the years 2011-2012. Attained 11th Place in ACM ICPC Dhaka Regionals 2012 as part of team *BUET_Variables*. Attained 31st position worldwide in IEEE Xtreme 7.0 Programming Contest, 2013
Electronic Design Contest	Runner-up at Cadence Xtensa Design Contest 2015 for project titled Adaptive Beamforming for Microphone Array

Extracurricular Activity

Math Olympiad Coaching	Coached for Bangladesh National Math Olympiad, edited a problem solving textbook for grade 6-10 students, and helped prepare guideline for future coaches.
IEEE	As part of IEEE BUET student branch, helped organize technical workshops, robotics contests (including International Robotics Contest 2013-14), hosted and proctored for programming contests (IEEE Xtreme 2014, 2015).