

Moumita Choudhury

✉ amchoudhury@umass.edu

📄 [moumitachoudhury.github.io](https://github.com/moumitachoudhury)

🌐 [moumitachoudhury](https://www.linkedin.com/in/moumitachoudhury)

📄 [/moumita-choudhury-77991911b](https://www.linkedin.com/in/moumita-choudhury-77991911b)

Education

- Sep 2021 – present **Ph.D.**, *Computer Science*, University of Massachusetts Amherst, United States.
3rd year, PhD candidate, Advisor: [Shlomo Zilberstein](#), Group: Resource Bounded Reasoning Lab.
- Sep 2021 – May 2024 **M.Sc.**, *Computer Science*, University of Massachusetts Amherst, United States.
Advisor: [Shlomo Zilberstein](#), Group: Resource Bounded Reasoning Lab, CGPA 3.97 out of 4.00
- 2016 – 2020 **B.Sc.**, *Computer Science & Engineering*, University of Dhaka, Bangladesh.
Advisor: [Md. Mosaddek Khan](#), Group: Cognitive Agents and Interaction Lab (CAIL), CGPA 3.84 out of 4.00

Experiences

- Sep 2021 – present **Graduate Research Assistant**, *Resource Bounded Reasoning Lab*, University of Massachusetts, Amherst.
- Developing algorithms to increase reliability and safety in autonomous systems
 - Developing planning algorithms to use human feedback and mitigating the impacts of negative side effects in autonomous systems
 - Developing decision theoretic models for semi-autonomous systems
- Feb 2023 – May 2023 **Graduate Teaching Assistant**, University of Massachusetts, Amherst.
COMPSCI 250, Introduction to Computation
- Jan 2021 – June 2021 **Lecturer**, *Ahsanullah University of Science and Technology*, Dhaka, Bangladesh.
- Courses Taught: Introduction to Computer Science, Software Development-II (Java), Software Development-V (C#), Assembly Language Programming
- Feb 2020 – Dec 2020 **Research Assistant**, *Cognitive Agents and Interaction Lab (CAIL)*, University of Dhaka.
- Studying security and game theoretic concept to improve security resource allocation problem.
 - Mentoring undergraduate students associated with the lab on final year research project on Partially Observable Markov Decision Process.
 - Shadow writing grants and proposals on security resource allocation problems and multi-agent systems.
- Jan 2019 – Jan 2020 **Undergraduate Research Student**, *CAIL*, University of Dhaka.
- Worked on Multi-agent coordination and developed several algorithms for solving different variations of Distributed Constraint Optimization Problems (DCOPs).

Research

- Conference Publications **Minimizing Negative Side Effects in Cooperative Multi-Agent Systems Using Distributed Coordination**,
Moumita Choudhury, Sandhya Saisubramanian, Hao Zhang, and Shlomo Zilberstein..
Accepted at the 37th International FLAIRS Conference.
- Minimizing Negative Side Effects in Cooperative Multi-Agent Systems Using Distributed Coordination**,
Moumita Choudhury, Sandhya Saisubramanian, Hao Zhang, and Shlomo Zilberstein..
Accepted as an Extended Abstract in The 23rd International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS) 2024.
- A Particle Swarm Based Algorithm for Functional Distributed Constraint Optimization Problems**,
Moumita Choudhury, Saaduddin Mahmud, and Md. Mosaddek Khan.
Proceedings of the Thirty-Fourth AAAI Conference on Artificial Intelligence, pages 7111-7118, 2020.
- AED: An Anytime Evolutionary DCOP Algorithm**,
Saaduddin Mahmud, **Moumita Choudhury**, Md. Mosaddek Khan, Long Tran-Thanh, and Nicholas R. Jennings.
Proceedings of the 19th International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS), pages 825-833, 2020

Learning Optimal Temperature Region for Solving Mixed Integer Functional DCOPs,
Saaduddin Mahmud, Md. Mosaddek Khan, **Moumita Choudhury**, Long Tran-Thanh, and Nicholas R. Jennings..

Proceedings of the 29th International Joint Conference on Artificial Intelligence (IJCAI), pages 268-275, 2020.

A Local Search Based Approach to Solve Continuous DCOPs.,

Amit Sarker, **Moumita Choudhury**, and Md. Mosaddek Khan..

Proceedings of the 20th International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS), pages 1127-1135, 2021.

Journal
Publications

A Particle Swarm Inspired Approach for Continuous Distributed Constraint Optimization Problems.,

Moumita Choudhury, Amit Sarker, Md. Mosaddek Khan, and William Yeoh.

Engineering Applications of Artificial Intelligence 123 (2023): 106280

Workshop
Publication

C-CoCoA: A Continuous Cooperative Approximation Algorithm to Solve Functional DCOPs.,

Amit Sarker, Abdullahil Baki Arif, **Moumita Choudhury**, and Md. Mosaddek Khan..

Proceedings of the 19th International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS), pages 1990-1992, 2020. (Extended Abstract)

11th International Workshop on Optimization and Learning in Multiagent Systems (OptLearnMAS) @ AAMAS, 2020.

Thesis

Applying Population-Based Algorithms to Solve Large (F)DCOPs.,

Moumita Choudhury, Saaduddin Mahmud, and Md. Mosaddek Khan.

Undergraduate Thesis, Computer Science and Engineering, University of Dhaka, 2019

Competitive Programming & Problem Solving

Online Judges

○ Solved numerous problems and participated in online programming contests in Codeforces, Codechef, LightOJ, UVa, etc.

Programming

○ **2nd**, Code Samurai (Inter University Hackathon), 2019,

Contests and

○ **10th**, NSU Inter University Girls' Programming Contest, 2018

Hackathons

○ **5th**, National Girls' Programming Contest, Bangladesh, 2017

Awards

Professor Victor Lesser Graduate Scholarship in Artificial Intelligence, UMass Amherst, 2022.

CICS 2021 Scholarship, UMass Amherst, 2021.

Farida Begum Women Empowerment Scholarship, 2019.

Awarded by Dept of CSE, University of Dhaka to one female student from each year as a recognition of excellence in competitive programming.

Divisional Winner, National Creative Talent Hunt, 2013.

Awarded by Government of Bangladesh to secondary and higher secondary students in recognition of Excellence in Science.

Voluntary Activities and Services

June 2023

Massenberg STEM Institute, UMass Amherst, Volunteer, University of Massachusetts Amherst.

July 2022

Eureka! Sponsor: Girls Inc., Volunteer, University of Massachusetts Amherst.

2021

AAMAS 2021, Student volunteer.

Mar 2016 – Dec

Shabab-Murshid Development Foundation.

2019

○ Taught and coordinated the math classes for underprivileged children of grade 6 to 10.

○ Worked as the coach and ensured participation in National Mathematical Olympiad, Bangladesh.

Jan 2019 – Dec

Mentor (Programming Instructor), University of Dhaka.

2019

○ Worked as the programming instructor of the undergraduate female students of Department of Computer Science.

Dec 2013

JENESYS 2.0, Japan.

○ Attended a short term invitation program to Japan funded by Japan International Cooperation Center and worked as a student friendship ambassador.