

Moumita Choudhury

✉ amchoudhury@cs.umass.edu 🏠 moumitachoudhury.github.io 📄 [Google Scholar](#)

EDUCATION

University of Massachusetts Amherst

Sep 2021 - present

Ms/PhD in Computer Science

Advisor: [Shlomo Zilberstein](#)

Group: Resource Bounded Reasoning Lab

University of Dhaka

2016 - 2020

B.Sc. in Computer Science and Engineering

CGPA: 3.84/4.00 Advisor: [Md. Mosaddek Khan](#)

EXPERIENCE

Resource Bounded Reasoning Lab, University of Massachusetts, Amherst

Graduate Research Assistant

Sep 2021 - present

- Developing planning algorithms to use human feedback and mitigating the impacts of negative side effects in autonomous systems

Ahsanullah University of Science and Technology

Lecturer (Grade-II)

Jan 2021 - June 2021

Cognitive Agents and Interaction Lab (CAIL), University of Dhaka

Research Assistant

Feb 2020 - Dec 2020

- 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.

Undergraduate Research Student

Jan 2019 - Dec 2019

- Worked on multi-agent coordination

PUBLICATIONS

Conference Publications

1. **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.
2. **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.
3. **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.
4. **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.

5. **A Local Search Based Approach to Solve Continuous DCOPs.**

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

Accepted for publication as a full paper and for oral presentation at the *20th International Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, 2021.

Preprints

* - equal contribution

2. **A Neural Network Based Approach to Learn Partially Observable Markov Decision Processes.**

Md. Farhan Tanvir, Ayman Rasheed, Md Mahmudur Rahman, **Moumita Choudhury**, and Md. Mosaddek Khan

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

Moumita Choudhury, Amit Sarker, Md. Mosaddek Khan, and William Yeoh
arXiv:2010.10192 (under review), 2020.

Thesis

1. **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.

SELECTED AWARDS AND HONORS

- **CICS 2021 scholarship, UMass Amherst** *Sep 2021*
- **1st Runner Up in Code Samurai 2019** *Nov 2019*
 - An inter-university hackathon organized by Bangladesh-Japan venture company BJIT and department of CSE, University of Dhaka.
- **Recipient of Farida Begum Women Empowerment Scholarship** *Jan 2019 - Dec 2019*
 - Awarded to one female student from CSE, University of Dhaka each year as a recognition of excellence in competitive programming.
- **10th position, NSU Inter University Girls' Programming Contest** *Jan 2018*
- **5th position, National Girls' Programming Contest** *Jan 2017*

RESEARCH MENTORING

- Md. Farhan Tanvir, Undergraduate Student (Thesis, JAIR, In review) *Jan 2020 - Sep 2021*
- Ayman Rasheed, Undergraduate Student (Thesis, JAIR, In review) *Jan 2020 - Sep 2021*

ACTIVITIES & SERVICES

Shabab-Murshid Development Foundation

Mar 2016- Dec 2019

Volunteer Teacher, Coordinator

- 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.

Mentor (Programming Instructor)

Jan 2019-Dec 2019

- Worked as the programming instructor of the undergraduate female students of Department of Computer Science, University of Dhaka.

JENESYS 2.0, Japan

Dec 2013

Participant

- Short Term Invitation Program to Japan funded by Japan International Cooperation Center

ACADEMIC PROJECTS

My Food Diary: A Food Habit Tracking App 🏆 **Best Project Award**

Feb 2018 - April 2018

- An android app for keeping track of daily food and water consumption and track weight.
- Genetic algorithm based automated food suggestions and goal oriented motivation.

Track Me: Personal Vehicle Tracking and Management 🏆 **Best Project Award** Jul - Oct 2017

- An android app for monitoring personal vehicle.
- Clustering based approach to detect anomaly in driving pattern and notify the car owner.

Responsibilities: Backend, Database and Core ML algorithms

AL.GO: Algorithm Visualizer

Feb 2017 - May 2017

- A java based demo project to visualize well known algorithms.
- Contains step by step visualization, codes, problem links on specific topic to help students learn faster.

CSSEDU Book Club: Book Sharing and Review

Feb 2019 - May 2019

- A website ([See project](#)) and an android app ([See project](#)) for book sharing and reviews for the reading club of department of CSE, University of Dhaka.

Responsibilities: Mobile Application

TECHNICAL SKILLS

Languages	C, C++, C#, Java, Python, Assembly	Libraries	Pytorch, Pandas, NumPy, Matplotlib
Databases	MySQL, MongoDB	Web	Flask, HTML, CSS, JS