Amit Sarker

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Education

University of Massachusetts Amherst **Amherst, MA**
M.S./Ph.D. in Computer Science, GPA 3.95/4.00 *Sep. 2022 – present*
Advisor: Prof. Shlomo Zilberstein, Resource-Bounded Reasoning Lab.

University of Dhaka **Dhaka, Bangladesh**
B.Sc. in Computer Science and Engineering, GPA 3.77/4.00 *Jan. 2016 – Dec. 2019*

Research Experience

University of Massachusetts Amherst **Amherst, MA**
Graduate Research Assistant *Sep. 2022 – present*

- **Trust and reputation:** study how LLM agents learn whom to trust from repeated interactions, and how trust guides their decisions in negotiation.
- **Strategic communication:** study how social agents negotiate, persuade, and build relationships when their goals only partly align.
- **Emergent cooperation:** study the group behavior that emerges when many agents interact over time, such as collaboration, collusion, and favors that bypass intended rules.

Cognitive Agents and Interaction Lab (CAIL), University of Dhaka **Dhaka, Bangladesh**
Research Assistant *Jan. 2020 – Dec. 2020*

- Worked with Prof. Md Mosaddek Khan. Developed local search and particle swarm algorithms for continuous distributed constraint optimization problems (C-DCOPs).

Publications

* denotes equal contribution.

Preprints

[8] **Amit Sarker**, Moumita Choudhury, Saaduddin Mahmud, and Shlomo Zilberstein. "Knowing Whom to Trust is not Enough: The Trust–Agreement Gap in Repeated Multi-Party LLM Negotiation." *arXiv:2610.31971*, 2026. [paper | website]

[7] Moumita Choudhury, **Amit Sarker**, and Shlomo Zilberstein. "The Helpful Agent Problem: When Emergent Cooperation Among LLM Agents Bypasses Intended Workflows." *arXiv:2610.31985*, 2026. [paper | website]

Journal Articles

[6] Liudas Panavas*, **Amit Sarker***, Sara Di Bartolomeo, Ali Sarvghad, Cody Dunne, and Narges Mahyar. "Illuminating the Landscape of Differential Privacy: An Interview Study on the Use of Visualization in Real-World Deployments." *IEEE Transactions on Visualization and Computer Graphics (TVCG)*, 2024. [paper]

[5] Moumita Choudhury, **Amit Sarker**, Samin Yaser, Md Maruf Al Alif Khan, William Yeoh, and Md Mosaddek Khan. "A Particle Swarm Inspired Approach for Continuous Distributed Constraint Optimization Problems." *Engineering Applications of Artificial Intelligence (EAAI)*, 123:106280, 2023. [paper]

Conference Papers

[4] **Amit Sarker**, Moumita Choudhury, and Md Mosaddek Khan. "A Local Search Based Approach to Solve Continuous DCOPs." In *Proceedings of the 20th International Conference on Autonomous Agents and*

Multiagent Systems (*AAMAS*), pages 1127–1135, 2021. [paper]

[3] **Amit Sarker**, Abdullahil Baki Arif, Moumita Choudhury, and Md Mosaddek Khan. "C-CoCoA: A Continuous Cooperative Constraint Approximation Algorithm to Solve Functional DCOPs." In *Proceedings of the 19th International Conference on Autonomous Agents and Multiagent Systems* (*AAMAS*), pages 1990–1992, 2020. Extended abstract. [paper]

Workshop Papers

[2] **Amit Sarker**, Moumita Choudhury, Saaduddin Mahmud, and Shlomo Zilberstein. "The Benefits and Limits of Trust Models in Repeated Multi-Party Negotiation with LLM Agents." In *NeurIPS 2026 Workshop on Large Language Models for Social Reasoning and Simulation* (*SocialAgent*), 2026. [paper]

[1] **Amit Sarker**, Abdullahil Baki Arif, Moumita Choudhury, and Md Mosaddek Khan. "C-CoCoA: A Continuous Cooperative Constraint Approximation Algorithm to Solve Functional DCOPs." In *11th International Workshop on Optimization and Learning in Multiagent Systems* (*OptLearnMAS*) *at AAMAS*, 2020.

Teaching

COMPSCI 325: Introduction to Human-Computer Interaction — **UMass Amherst**
Teaching Assistant — *Fall 2024*
Mentored 12 student teams through their final projects.

CICS 110: Foundations of Programming — **UMass Amherst**
Teaching Assistant — *Fall 2023*
Ran weekly Python labs for over 100 students.

Honors and Awards

Dr. Phil Bernstein Graduate Scholarship in Computer Science
UMass Amherst — *2025*

James Kurose Scholarship in Computer Science
UMass Amherst — *2023*

Conference Scholarship
AAMAS 2021 and AAMAS 2020 — *2020 – 2021*

1st Runner-Up, Code Samurai Hackathon
Efficient transportation routes in Dhaka city — *2019*

Professional Service

Reviewer
AAAI Conference on Artificial Intelligence (*AAAI 2026*) — *2026*

Program Committee
AAAI/ACM Conference on AI, Ethics, and Society (*AIES 2025*) — *2025*

Student Volunteer
IEEE VIS 2023 — *2023*

Student Volunteer
AAMAS 2021 and AAMAS 2020 — *2020 – 2021*

Industry Experience

TigerIT Bangladesh Limited — **Dhaka, Bangladesh**
Software Engineer (*Quality Assurance*) — *Apr. 2020 – Jul. 2021*