

Saaduddin Mahmud

(+1)347-948-0507 | smahmud@umass.edu | saadmahmud.com

EDUCATION

University of Massachusetts Amherst

2nd year CS MS/PhD Student

Massachusetts, USA

September 2021 – Present

University of Dhaka

B.Sc. in Computer Science and Engineering (CGPA: 3.86/4.00)

Dhaka, Bangladesh

January 2016 – December 2019

EXPERIENCE

Research Assistant

Resource-Bounded Reasoning Lab, CICS, University of Massachusetts Amherst.

September 2021 – Present

Massachusetts, USA

- Advisor: Prof. Shlomo Zilberstein
- AI Safety.
- Explainable AI.
- Autonomous Vehicle.

Lecturer

Dept. of CSE, Ahsanullah University of Science and Technology.

January 2021 – July 2021

Dhaka, Bangladesh

- Math for Computer Science.
- Compiler Design.

Researcher

Cognitive Agents & Interaction Lab (CAIL), CSE, University of Dhaka

February 2020 – June 2021

Dhaka, Bangladesh

- Deep Reinforcement Learning for Solving Combinatorial Games.

Undergraduate Research Assistant

Cognitive Agents & Interaction Lab (CAIL), CSE, University of Dhaka

September 2018 – December 2019

Dhaka, Bangladesh

- Decentralized Multi-Agent Coordination using Distributed Reasoning.

CURRENT RESEARCH PROJECTS

1. REVEALE: A Framework for Reward Verification and Learning.
Saaduddin Mahmud, Sandhya Saisubramanian, and Shlomo Zilberstein. (Under Review 2022).
2. Causal Explanations for Sequential Decision Making Under Uncertainty: Foundations and Analysis.
Samer B. Nashed, **Saaduddin Mahmud**, Claudia V. Goldman, and Shlomo Zilberstein. (Under Review 2022).
3. A Simulation-Based Online Planning Algorithm for Multi-Agent Cooperative Environments.
Rafid Amir Mahmud, Fahim Faisal, **Saaduddin Mahmud**, and Md. Mosaddek Khan. (**AAMAS, 2022, Ext. Abs.**).

UNDERGRAD PUBLICATIONS

1. Learning Optimal Temperature Region for Solving Mixed Integer Functional DCOPs.
Saaduddin Mahmud, Md. Mosaddek Khan, Moumita Choudhury, Long Tran-Thanh, and Nicholas R. Jennings. (**IJCAI, 2020**).
2. AED: An Anytime Evolutionary DCOP Algorithm.
Saaduddin Mahmud, Moumita Choudhury, Md. Mosaddek Khan, Long Tran-Thanh, and Nicholas R. Jennings. (**AAMAS, 2020**).
3. A Particle Swarm Based Algorithm for Functional Distributed Constraint Optimization Problems.
Moumita Choudhury, **Saaduddin Mahmud**, and Md. Mosaddek Khan. (**AAAI, 2020**).
4. Applying Population-Based Algorithms to Solve Large (F)DCOPs.
Saaduddin Mahmud and Moumita Choudhury (Equal Contribution). **Undergrad Thesis, University Of Dhaka, 2020**.

HONORS & AWARDS

B.Sc. Scholarship by the University Grants Commission

Awarded for outstanding performance in B.Sc.

ACM International Collegiate Programming Contest (ICPC), Dhaka Regional - 2017

Represented University of Dhaka in the biggest national-level programming contest.

H.S.C. Scholarship by the Bangladesh Government

Awarded for outstanding performance in High-School.

SKILLS

Languages: Python, Julia, C/C++, Java, JavaScript.

Frameworks: Node.js, Flask.

Database: Oracle, MongoDB

Libraries: JAX, PyTorch, TensorFlow.

Hardware Level: MIPS, NASM Assembler, CUDA.

OS: Ubuntu, Windows.

SOFTWARE PROJECTS

AL.GO | *A JAVA Application For Visualization of Classical Algorithms.* 2017

- Step by step visualizer for sorting and graph algorithms.
- Contains codes, problem links on these algorithms to help students learn faster.

MuSys | *An Android Application For Music Synchronization Across Mobile Devices.* 2017

- Music synchronization across different mobile devices using shared music files.
- Functions as a social network where you can share music and become friends with other users.

EasyML | *A Python Web Application For Visual Machine Learning.* 2018

- High-dimensional data visualization using different Dimensionality Reduction Algorithms with intuitive UI.
- Visual Performance Comparison and hyperparameter optimization for different machine learning algorithms.

REFERENCE

Professor Shlomo Zilberstein | *Professor, CICS, University of Massachusetts Amherst, Amherst, MA, USA*

- Email: shlomo@cs.umass.edu
- Personal Website: <https://groups.cs.umass.edu/shlomo/>