

Saaduddin Mahmud

(+880)1943027891 | saadmahmud14@gmail.com | saadmahmud.com¹

EDUCATION

University of Dhaka

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

Dhaka, Bangladesh

January 2016 – December 2019

RESEARCH EXPERIENCE

Full-time Research Assistant (Paid)

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

February 2020 – Present

Dhaka, Bangladesh

- Multi-Agent Reinforcement Learning using Graph-Neural architecture for solving combinatorial games.
- Writing Grants and Presentations.

Undergraduate Research Assistant

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

September 2018 – December 2019

Dhaka, Bangladesh

- Advisor: Dr. Md. Mosaddek Khan.
- Decentralized Multi-Agent Coordination using Distributed Constraint Reasoning.

CURRENT RESEARCH PROJECTS

1. Rafid Amir Mahmud*, Fahim Faisal*, **Saaduddin Mahmud***, and Md. Mosaddek Khan. GraphZero: Using Graph Neural Networks for Solving Combinatorial Games on Graphs. **Working Paper, Part of ICT Innovation Grant AI4SG Project, 2020.**
2. **Saaduddin Mahmud**, and Md. Mosaddek Khan. Ad Hoc Teamwork in Multi-Agent Pathfinding Domain: Formulation and Algorithms. **Working Paper, 2020.**
3. **Saaduddin Mahmud**, Md. Mosaddek Khan, and Nicholas R. Jennings. On Population-Based Algorithms for Distributed Constraint Optimization Problems. **Under Review, 2020.**
4. K. M. Merajul Arefin, Mashrur Rashik, **Saaduddin Mahmud**, and Md. Mosaddek Khan. An Artificial Bee Colony Based Algorithm for Continuous DCOPs. **Under Review, 2020.**

PUBLICATIONS

1. **Saaduddin Mahmud**, Md. Mosaddek Khan, Moumita Choudhury, Long Tran-Thanh, and Nicholas R. Jennings. Learning Optimal Temperature Region for Solving Mixed Integer Functional DCOPs. In Proceedings of the 29th International Joint Conference on Artificial Intelligence (**IJCAI**), **2020.**
2. **Saaduddin Mahmud**, Moumita Choudhury, Md. Mosaddek Khan, Long Tran-Thanh, and Nicholas R. Jennings. AED: An Anytime Evolutionary DCOP Algorithm. In Proceedings of the 19th International Conference on Autonomous Agents and Multi-Agent Systems (**AAMAS**), **2020.**
3. Moumita Choudhury, **Saaduddin Mahmud**, and Md. Mosaddek Khan. A Particle Swarm Based Algorithm for Functional Distributed Constraint Optimization Problems. In Proceedings of the Thirty-Fourth AAAI Conference on Artificial Intelligence (**AAAI**), **2020.**
4. **Saaduddin Mahmud** and Moumita Choudhury (Equal Contribution). Applying Population-Based Algorithms to Solve Large (F)DCOPs. **Thesis, Department of Computer Science and Engineering, University Of Dhaka, 2020.**

¹Visit for more up to date information.

HONORS & AWARDS

H.S.C. Scholarship of the Bangladesh Government

Awarded for outstanding performance in High-School.

- Yearly stipend and full tuition waiver for the undergrad.

Battle of Brains Programming Contest

An annual competitive programming contest arranged by University of Dhaka.

- Champion in The Junior Division, Battle of Brains - 2016
- 1st Runner up in The Senior Division, Battle of Brains - 2017

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

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

SKILLS

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

Frameworks: Node.js, Flask.

Database: MySQL, Oracle, MongoDB

Libraries Pytorch, Fast.ai, NetworkX.

Hardware Level: MIPS, NASM Assembler, Nvidia CUDA.

OS: Ubuntu, Windows, Raspbian.

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.

OTHER EXPERIENCES

Mentoring

- Mentoring undergraduate students on research projects and technical report writing at CSE, DU.

REFERENCE

Dr. Md. Mosaddek Khan | *Assistant Professor, Department of Computer Science & Engineering, University of Dhaka*

- Email: mosaddek@du.ac.bd
- Personal Website: mmkhansajeeb.com

Dr. Upama Kabir | *Professor, Department of Computer Science & Engineering, University of Dhaka*

- Email: upama@cse.du.ac.bd

Dr. Md. Mamun-or-Rashid | *Professor, Department of Computer Science & Engineering, University of Dhaka*

- Email: mamun@cse.du.ac.bd

Dr. Nicholas R. Jennings | *Professor, Department of Computing, Imperial College London*

- Email: n.jennings@imperial.ac.uk

Dr. Long Tran-Thanh | *Associate Professor, Department of Computer Science, University of Warwick*

- Email: long.tran-thanh@warwick.ac.uk