Moumita Choudhury

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EDUCATION

University of Dhaka   *2016 - 2020*
B.Sc. in Computer Science and Engineering
GPA: 3.84/4.00 Advisor: Dr. Md. Mosaddek Khan

RESEARCH EXPERIENCE

Cognitive Agents and Interaction Lab (CAIL), University of Dhaka   *Feb 2020 - present*
Research Assistant

- Studying security and game theoretic concept to improve security resource allocation problem.

- Mentoring undergraduate students associated with the lab on final year research project.

RESEARCH INTEREST

- Multi-agent Systems (Coordination and Planning, Multi-agent RL).

- AI for Social Impact and Computational Sustainability (Game Theory and RL for social good).

- Interaction Between Human and Robot/AI.

PUBLICATIONS

Preprints   * - equal contribution

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.

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, 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)**, 2020.*

3. **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)**, 2020*

4. **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)**, 2020.* (Extended Abstract)
   *11th International Workshop on Optimization and Learning in Multiagent Systems **(OptLearnMAS)** @ AAMAS, 2020.*

Theses

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

2019   **1st Runner Up,** Code Samurai 2019 - Hackathon by BJIT
2019   Awarded Farida Begum Women Empowerment Scholarship
2018   **10th position,** NSU Inter University Girls' Programming Contest
2017   **5th position,** National Girls' Programming Contest
2013   **Divisional Winner, Dhaka** National Creative Talent Hunt 2013
2012   **Second Runner up,** Regional Mathematical Olympiad, Dhaka

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 coordinator of the annual study tour, cultural program 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   *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   *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   *July 2017 - Oct 2017*

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

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.

CSEDU 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.

Technical Skills

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