Moumita Choudhury

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Education

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

Research Experience

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

- *Research Assistant* *Feb 2020 - present*
  - Studying security and game theoretic concept to improve security resource allocation problem.
  - Mentoring undergraduate students associated with the lab on final year research project.
- *Undergraduate Research Student* *Jan 2019 - Dec 2019*
  - Worked on multi-agent coordination

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*, 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.*

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

- **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*
- **Divisional Winner, National Creative Talent Hunt 2013** *2013*
  - An initiative by the **Government of Bangladesh** to find great talents from all over the country and the **winners were awarded by the Prime Minister of Bangladesh**.
- **Second Runner up, Regional Mathematical Olympiad, Dhaka** *2012*

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 *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.

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, HTML, CSS, JS