Sanaz Rabinia Haratbar

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Department of Computer Science
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RESEARCH INTERESTS

Parameterized Algorithms, Parallel Algorithms, Edge Computing, Game Theory, Distributed Systems

EDUCATION

1/2019 - Present **Ph.D. Student, Computer Science**
Department of Computer Science,
Wayne State University, Detroit, MI
Minor: Mathematics
Advisor: Dr. Daniel Grosu

9/2017 - 12/2018 **Ph.D. Student (Transferred), Computer Science**
Department of Computer Science,
Louisiana State University, Baton Rouge, LA

9/2011 - 9/2013 **M.Sc., Mathematics, Sharif University of Technology, Iran**

9/2007 - 7/2011 **B.Sc., Mathematics, Shahid Beheshti University, Iran**

PUBLICATIONS

Published/Accepted

Conference Paper

1. Data Sharing-Aware Task Allocation in Edge Computing Systems
S. Rabinia, H. Mehryar, M. Brocanelli, D. Grosu, *Proc. of the IEEE International Conference on Edge Computing (IEEE EDGE 2021)*, December 18-20, 2021. Guangzhou, China.

Journal Paper

2. Machine Learning Approach to Forecast Work Zone Mobility using Probe Vehicle Data
M. Kamyab, S. Remias, E. Najmi, S. Rabinia, JM. Waddell, *Transportation Research Record*, SAGE Publications, July 12, 2020.

Book Chapter

3. A Comprehensive Study of Game Theory Applications for Smart Grids and Demand Side Management Programs, and Transportation Networks.
A. Mohammadi, S. Rabinia, *Smart Microgrids*, pp 57-64, Springer, January 18, 2019.

Current Papers Under Preparation

1. Algorithms for Data Sharing-Aware Task Allocation in Edge Computing Systems
S. Rabinia, N. Didar, D. Grosu, M. Brocanelli, To be submitted to *IEEE Transactions on Cloud Computing*.

2. Parallel Parameterized Algorithms for Knapsack Problems
S. Rabinia, D. Grosu, To be submitted to *Journal of Parallel and Distributed Computing.*

FELLOWSHIPS, AWARDS AND HONORS

- Graduate Research Excellence award in Computer Science, Wayne State University, 2022.
- Outstanding Graduate Teaching Assistant Award in Computer Science, Wayne State University, 2020.
- Ranked 85th among 15000 participation in University Entrance Exam, 2011.
- Ranked as the 5th student among 63 undergraduate students in the Department of Mathematics, SBU, 2011.
- Qualified for the second round of the National Mathematical Olympiad, 2005.

TRAVEL AWARDS

- Full Scholarship to attend Grace Hopper Conference, September 21-23, 2022.
- Travel Award to attend CRA-WP Grad Cohort, Computing Research Association Women Workshop, April 21-23, 2022.
- Full Scholarship to attend CRA-WP Grad Cohort, Computing Research Association Women Workshop, April 22-24, 2021.
- Travel Award for International Conference on Machine Learning (ICML), June 9-15, 2019.
- Travel Award to attend StringBio Conference at University of Central Florida, October 25-27, 2018.
- Travel Award for Approximation Theory and Machine Learning Conference at Purdue University, September 29-30, 2018.

PRESENTATIONS

Conferences

- **Data Sharing-Aware Task Allocation in Edge Computing Systems**

  IEEE International Conference on Edge Computing, December 20, 2021.

Workshops

- **Data Sharing-Aware Task Allocation in Edge Computing Systems**

  CRA-WP Grad Cohort, Computing Research Association Women Workshop, April 23, 2022.

- **Parallel Fixed-Parameter Tractable Algorithms**

  CRA-WP Grad Cohort, Computing Research Association Women Workshop, April 23, 2021.

- **Some Results of the Existence of P_3- Factor in Regular Graphs**

  3rd Istanbul Design Theory, Graph Theory and Combinatorics Workshop, Turkey, June 16-21, 2016.

  8th Conference and Workshop on Algebraic Combinatorics and Graph Theory, Iran, April 17, 2015.

University

Parameterized Algorithms

Weekly seminar at Wayne State University, Summer 2019.

Burrows-Wheeler Transform and FM Index

Presentation at University of Central Florida, Summer 2018.

Presentation at Louisiana State University, Fall 2018.

A Rational Approach to the Coloring in Graph, Fractional Graph Theory

Presentation at Sharif University of Technology, Fall 2013.

Nowhere-Zero Flow in Random Graphs

Presentation at Sharif University of Technology, Fall 2012.

Application of Hyperbolic Geometry in Planar Models of the Hyperbolic Plane "The Poincare Disc Model"

Presentation at Shahid Beheshti University, Summer 2011.

A review on "Gödel Incompleteness Theorem", Weekly Seminars in Logic

Presentation at Shahid Beheshti University, Fall 2010.

TEACHING

Primary Instructor for three courses at Wayne State University

CSC3110: Algorithm Design and Analysis, Summer 2021 and 2022.

CSC2201: Laboratory for Data Structures and Algorithm Analysis, Winter 2020.

CSC3020: Java Programming, Spring/Summer 2019.

Graduate Teaching Assistant for two courses at Wayne State University

CSC3020: Java Programming, Fall 2019.

CSC4996: Senior Capstone Project, Winter 2019.

Graduate Teaching Assistant for three courses at Louisiana State University

CSC1351: Java Programming, Fall 2017, Spring 2018, Fall 2018.

SERVICE

Reviewer

IEEE Data Compression Conference (DCC 2019)

PROFESSIONAL AFFILIATIONS

ACM (Association for Computing Machinery)

IEEE (Institute of Electrical and Electronics Engineers)

IMS (Iranian Mathematical Society)

IranWiC (Iranian Women in Computer Science)

PROJECTS

- Warrior Delivery Web Application: A doorstep delivery service for Wayne State University's Dining halls, Wayne State University, Dec 14, 2020.
- Succinct Data Structures and Text Indexing: Collaborating on an NSF project to index a portion of the web pages examined by their indexing systems, Louisiana State University, June 15, 2018.
- Date-A-Base for Dating Website : Design Personal Information System, a MySQL database on the LSU classes' server using the MariaDB engine, Louisiana State University, December 14, 2018.
- Matching Handwriting with Its Author: An implementation of Convolutional Neural Network Algorithm for matching handwriting with its author, Louisiana State University, April 29, 2018.

COMPUTER SKILLS

- Programming Languages: Java, Python, R, C, C++
- Programming Tools: gcc, Visual Studio, Eclipse IDE, Spring boot, Hibernate
- Parallel Programming: MPI, OpenMP, pThreads
- Machine Learning: Python, Octave
- Web Technology: JavaScript, HTML, CSS, PHP
- Operating Systems: MS Windows, Advance Operating System
- Databases: SQL Server, MySql, Hadoop, Microsoft Azure
- Software Engineering Methods: UML, Agile, REST
- Unit Testing: JUnit, PHPUnit, Laravel
- Other Tools: Github, LaTeX, Corel, Continuous Integration