

Mohamad Latifian

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Research Interests

Computational Social Choice, Voting, Fair Division, Mechanism Design, Algorithmic Game Theory

Education

Ph.D. in Computer Science

Sep. 2020 – present

University of Toronto, Canada

Advisors: Nisarg Shah and Allan Borodin

GPA: 4+/4

M.Sc. in Algorithms and Computation

Sep. 2017 – Sep. 2019

Sharif University of Technology, Iran

Advisor: Mohammad Ghodsi

Thesis: *Considering the Effect of Abstention in the Distortion Value.*

GPA: 19.59/20

B.Sc. in Computer Engineering

Sep. 2012 – Jul. 2017

Sharif University of Technology, Iran

Advisor: Hamid Zarrabi-zadeh

Thesis: *Hamiltonian Path in Solid Grid Graphs.*

GPA: 17.22/20

Journal Publications

- J1. M. Seddighin, M. Latifian, and M. Ghodsi, *On the Distortion Value of Elections with Abstention.* Journal of Artificial Intelligence Research, 70:pp. 567–595, 2021.

Conference Publications

(Authors in alphabetical order)

- C9. S. Ebadian, A. Filos-Ratsikas, M. Latifian, and N. Shah. *Explainable and Efficient Randomized Voting Rules.* Proc. of 37th Conference on Neural Information Processing Systems (NeurIPS), 2023. (Forthcoming.)
- C8. V. Gkatzelis, M. Latifian, and N. Shah. *Best of Both Distortion Worlds.* Proc. of the 24th ACM Conference on Economics and Computation (EC), pp. 738–758, 2023.
- C7. S. Ebadian, M. Latifian, and N. Shah. *The Distortion of Approval Voting with Runoff.* Proc. of the 22nd International Conference on Autonomous Agents and Multiagent Systems (AAMAS), pp. 1752–1760, 2023.
- C6. A. Kahng, M. Latifian, and N. Shah. *Voting with Preference Intensities.* Proc. of 37th AAAI Conference on Artificial Intelligence (AAAI), pp. 5697–5704, 2023.

- C5. A. Borodin, D. Halpern, M. Latifian, and N. Shah. *Distortion in Voting with Top-t Preferences*. Proc. of the 31st International Joint Conference on Artificial Intelligence (IJCAI), pp. 116–122, 2022.
- C4. A. Farhadi, M. Hajiaghayi, M. Latifian, M. Seddighin, and H. Yami. *Almost Envy-freeness, Envy-rank, and Nash Social Welfare Matchings*. Proc. of the 35th AAAI Conference on Artificial Intelligence (AAAI), pp. 5355–5362, 2021.
- C3. G. Christodoulou, V. Gkatzelis, M. Latifian, and A. Sgouritsa. *Resource-aware Protocols for Network Cost-sharing Games*. Proc. of the 21st ACM conference on economics and computation (EC), pp. 81–107, 2020.
- C2. M. Ghodsi, M. Latifian, and M. Seddighin. *On the Distortion Value of the Elections with Abstention*. Proc. of the 33rd AAAI Conference on Artificial Intelligence (AAAI), pp. 1981–1988, 2019.
- C1. M. Ghodsi, M. Latifian, A. Mohammadi, S. Moradian, and M. Seddighin. *Rent Division Among Groups*. Proc. of the 12th International Conference on Combinatorial Optimization and Applications (COCOA), pp. 577–591, 2018.

Working Papers

(Authors in alphabetical order)

- M3. M. Bedaywi, B. Flanigan, M. Latifian, and N. Shah. *Public Spirited Participatory Budgeting*. (Submitted to AAAI)
- M2. S. Barman, S. Ebadian, M. Latifian, and N. Shah. *Fair Division with Market Values*.
- M1. S. Ebadian, A. Filos-Ratsikas, M. Latifian, and N. Shah. *Computational Aspects of Distortion*.

Research Experience

Visiting Graduate Researcher

University of Oxford, UK.

Host: Edith Elkind

Sep – Nov 2023

Research Intern

Max Planck Institute for Informatics, Germany.

Host: Alkmini Sgouritsa

Work title: *Resource-Aware Protocols for Network Cost-Sharing Games (C3.)*

May – June 2019

Honors and Awards

- **Silver medal** in the 21st Iranian National Olympiad in Informatics (INOI). 2011
- **Ranked 2nd and 7th** in Nationwide Graduate Entrance Exam, in Algorithms and Computation and Artificial Intelligence majors respectively. 2017
- **Ranked 1st** in cumulative GPA among 97 M.Sc. students of the department, Sharif University of Technology. 2019
- **Ranked 147th** out of 300,000 competitors in the national university entrance exam. 2012
- Scholarship from Iranian National Elites Foundation 2012 – 2019

Teaching Experience

Teaching Assistant

University of Toronto

- **Algorithm Design, Analysis & Complexity** Fall '23
- **Data Structures and Analysis** Winter '23
- **Algorithmic Game Theory and Mechanism Design** Fall '22

Teaching Assistant

Sharif University of Technology

(* = Head TA)

- **Algorithmic Game Theory** Fall '17, Spring '19*
- **Design and Analysis of Algorithms** Fall '14, Fall '18*
- **Theory of Languages and Automata** Fall '14, Spring '15, Fall '15, Spring '16
- **Data Structures and Algorithms** Spring '15

Member of the Scientific Committee

*4th Sharif National Students Competition,
Sharif University of Technology.*

Fall 2016

Head of the Scientific Committee

*13th & 14th Mehregan Mathematic Workshop,
Shahid Ejeii High School.*

Aug. 2013 and Aug. 2014

Teaching Special Topics in Mathematics

Teaching high-school students preparing for Olympiad in Informatics.

Topics included Algorithms, Graph Theory, Problem-Solving Strategies, and Programming.

2011-2013

Activities

- **Elected Member & President** of the Students Scientific Chapter (SSC) *2014 – 2015*
Computer Engineering Department of Sharif University of Technology.
- **Chief of Staff** of 17th & 18th International Collegiate Programming Contest (ICPC) *2015 – 2016*
Asia Region - Tehran Site.
- **Chief of Staff** of 6th & 7th AI Challenge *2014 – 2015*
An event where AI agents written in Java, C++, or Python compete to pass the game field and overcome other agents.