

# Mohamad Latifian

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## Research Interests

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

## Education

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### 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

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- 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)

- 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), 2023. (Forthcoming)
- C6. A. Kahng, M. Latifian, and N. Shah. *Voting with Intensive Preferences.* Proc. of the 37th AAI Conference on Artificial Intelligence, 2023. (Forthcoming)
- 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), p. 4, 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 AAI Conference on Artificial Intelligence, volume 35, 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, volume 33, 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, pp. 577–591, Springer, Cham, 2018.

## Research Experience

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### Research Intern

May – June 2019

Max Planck Institute for Informatics, Germany.

Host: Alkmini Sgouritsa

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

## Honors and Awards

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

## Teaching Experience

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### Teaching Assistant

University of Toronto

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

### Teaching Assistant

(\* = Head TA)

Sharif University of Technology

- **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

Fall 2016

4<sup>th</sup> Sharif National Students Competition,  
Sharif University of Technology.

### Head of the Scientific Committee

Aug. 2013 and Aug. 2014

13<sup>th</sup> & 14<sup>th</sup> Mehregan Mathematic Workshop,  
Shahid Ejeii High School.

## Teaching Special Topics in Mathematics

2011-2013

*Teaching high-school students preparing for Olympiad in Informatics.*

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

## Activities

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- **Elected Member & President** of the Students Scientific Chapter (SSC) 2014 – 2015  
Computer Engineering Department of Sharif University of Technology.
- **Chief of Staff** of 17<sup>th</sup> & 18<sup>th</sup> International Collegiate Programming Contest (ICPC) 2015 – 2016  
Asia Region - Tehran Site.
- **Chief of Staff** of 6<sup>th</sup> & 7<sup>th</sup> 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.