Mohamad Latifian

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Research Interests

Computational Social Choice, Voting, Fair Division, Algorithmic Fairness, 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)

M6. M. Bedaywi, B. Flanigan, M. Latifian, and N. Shah. *Public Spirited Participatory Budgeting*. (Submitted to AAAI)

M5. S. Ebadian, A. Filos-Ratsikas, M. Latifian, and N. Shah. *Computational Aspects of Distortion*. (Submitted to AAMAS)

M4. S. Barman, S. Ebadian, M. Latifian, and N. Shah. *Fair Division with Market Values*.(In preparation for submission to ACM EC)

M3. M. Latifian, N. Shah, and A. Voudouris. *Distortion of Approval Matchings and Paper Assignment*.

M2. E. Elkind, M. Latifian, and N. Teh. *Temporal Fair Division*.

M1. M. Bullinger, E. Elkind, and M. Latifian. *Fair and Efficient Public Transportation*.

Research Experience

Visiting Graduate Researcher *Sep. – Nov. 2023*
University of Oxford, UK.
  Host: *Edith Elkind*

Visiting Graduate Researcher *May – Jun. 2019*
Max Planck Institute for Informatics, Germany.
  Host: *Alkmini Sgouritsa*
  Work title: *Resource-Aware Protocols for Network Cost-Sharing Games (C3.)*

Professional Service

- **PC Member:** AAAI '21, AAAI '23, AAMAS '23

- **Reviewer (Journal):** Autonomous Agents and Multi-Agent System, Artificial Intelligence (AIJ)

Honors and Awards

- **Silver medal** in the 21st Iranian National Olympiad in Informatics (INOI). *2011*

- **Ranked 2nd and 7th** in Nationwide Graduate Entrance Exam, *2017*
  in Algorithms and Computation and Artificial Intelligence majors respectively.

- **Ranked 1st** in cumulative GPA among 97 M.Sc. students of the department, *2019*
  Sharif University of Technology.

- **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 (* := Lead 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*
4th Sharif National Students Competition,
Sharif University of Technology.

Head of the Scientific Committee *Aug. 2013 and Aug. 2014*
13th & 14th 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

- **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.