

Soroush Ebadian

ebadian.org
soroush@cs.toronto.edu
+1 (647) 937-3617

EDUCATION

- **Ph.D. in Computer Science** Sep. 2020 – Present
University of Toronto, Canada
Advisor: [Nisarg Shah](#)
GPA: 4.0+/4.0
- **B.Sc. in Computer Engineering** Sep. 2015 – Aug. 2020
Sharif University of Technology, Tehran, Iran
GPA: 18.68/20

EXPERIENCE

- **Machine Learning Research Intern, RBC Borealis**, Toronto, Canada Sep. 2024 – Present
Conducted research on deep multi-task learning models for time series data.
- **Visiting Researcher, Harvard University**, Boston, USA Sep. – Dec. 2023
Investigated problems in computational social choice and AI alignment. Host: [Ariel D. Procaccia](#)
- **Developer, Spliddit.org** June 2023 – Present
A not-for-profit website providing free access to provably fair automated decision-making algorithms, used by more than 250,000 people to date. Enhanced the efficiency of the existing goods division algorithm and developed an improved algorithm for task division.
- **Research Intern, Institute of Science and Technology Austria**, Austria Jul. – Sep. 2019
Designed and implemented verification techniques for concurrent programs in the CIVL language and verifier, which is an extension of the [BOOGIE](#) verifier. Host: [Thomas A. Henzinger](#)
- **Technical Manager, CafeBazaar**, Tehran, Iran Jan. 2017 – Sep. 2020
 - *CafeBazaar Cloud*: Led three teams of 5-10 engineers to develop six cloud infrastructure services — offering storage, database, and big-data management solutions to tech companies serving tens of millions of users.
 - *Divar*: Launched a multi-platform buyer-seller chat feature for Divar, an online classified ads with 16 million users.
- **Software Engineer, CafeBazaar**, Tehran, Iran Apr. 2015 – Jan. 2017
 - Developed a buyer-seller chat feature for Divar's iOS app, used by over 2 million users.
 - Redesigned and scaled the backend architecture, increasing capacity from 25 million to over 100 million daily requests.

SELECTED HONORS AND AWARDS

- **Gold medal in the National Olympiad in Informatics**, Iran 2014
- **2nd place in the ACM-ICPC West Asia Regional Contest**, Tehran, Iran 2015
- **Ontario Graduate Scholarship (C\$15000)** 2023
Government of Ontario and University of Toronto
- **Alfred B. Lehman Graduate Scholarship in Computer Science (C\$5000)** 2023 and 2024
Dept. of Computer Science, University of Toronto
- **Computer Science 50th Anniversary Graduate Scholarship (C\$2000)** 2022
Dept. of Computer Science, University of Toronto
- **4th place in the National Scientific Olympiad in Computer Science and Engineering**, Iran 2019
- **Research Scholarship from the Austrian Agency for International Cooperation in Education and Research (OeAD-GmbH) (€3000)** Summer 2019

- C17. **S. Ebadian** and E. Micha, “[Boosting Sortition via Proportional Representation](#),” in *Proc. of 24rd Int. Conf. on Autonomous Agents and MultiAgent Systems (AAMAS’25)*, 2025. Forthcoming.
- C16. **S. Ebadian** and N. Shah, “[Every Bit Helps: Achieving the Optimal Distortion with a Few Queries](#),” in *Proc. of 39th Annual AAAI Conf. on Artificial Intelligence (AAAI’25)*, 2025. Forthcoming.
- C15. B. Cookson, **S. Ebadian**, and N. Shah, “[Temporal Fair Division](#),” in *Proc. of 39th Annual AAAI Conf. on Artificial Intelligence (AAAI’25)*, 2025. Forthcoming.
- C14. B. Cookson, **S. Ebadian**, and N. Shah, “[Constrained Fair and Efficient Allocations](#),” in *Proc. of 39th Annual AAAI Conf. on Artificial Intelligence (AAAI’25)*, 2025. Forthcoming.
- C13. S. Barman, **S. Ebadian**, M. Latifian, and N. Shah, “[Fair Division with Market Values](#),” in *Proc. of 39th Annual AAAI Conf. on Artificial Intelligence (AAAI’25)*, 2025. Forthcoming.
- C12. P. A. Alamdari, **S. Ebadian**, A. D. Procaccia, “[Policy Aggregation](#),” in *Proc. of 38th Annual Conf. on Neural Information Processing Systems (NeurIPS’24)*, 2024. Forthcoming.
- C11. **S. Ebadian**, R. Freeman, N. Shah, “[Harm Ratio: A Novel and Versatile Fairness Criterion](#),” in *Proc. of 4th ACM Conf. on Equity and Access in Algorithms, Mechanisms, and Optimization (EAAMO’24)*, pp. 1–14, 2024.
- C10. **S. Ebadian**, D. Halpern, E. Micha, “[Metric Distortion with Elicited Pairwise Comparisons](#),” in *Proc. of 33rd Int. Joint Conf. on Artificial Intelligence (IJCAI’24)*, pp. 2791–2798, 2024.
- C9. **S. Ebadian**, A. Filos-Ratsikas, M. Latifian, N. Shah, “[Computational Aspects of Distortion](#),” in *Proc. of 23rd Int. Conf. on Autonomous Agents and MultiAgent Systems (AAMAS’24)*, pp. 499–507, 2024.
- C8. **S. Ebadian**, A. Filos-Ratsikas, M. Latifian, N. Shah, “[Explainable and Efficient Randomized Voting Rules](#),” in *Proc. of 37th Annual Conf. on Neural Information Processing Systems (NeurIPS’23)*, pp. 23034–23046, 2023.
- C7. **S. Ebadian**, M. Latifian, N. Shah, “[The Distortion of Approval Voting with Runoff](#),” in *Proc. of 22nd Int. Conf. on Autonomous Agents and MultiAgent Systems (AAMAS’23)*, pp. 1752–1760, 2023.
- C6. **S. Ebadian**, G. Kehne, E. Micha, A. D. Procaccia, and N. Shah, “[Is Sortition Both Representative and Fair?](#),” in *Proc. of 36th Annual Conf. on Neural Information Processing Systems (NeurIPS’22)*, pp. 3431–3443, 2022.
- C5. **S. Ebadian**, A. Kahng, D. Peters, and N. Shah, “[Optimized Distortion and Proportional Fairness in Voting](#),” in *Proc. of 23rd ACM Conf. on Economics and Computation (EC’22)*, pp. 563–600, 2022.
- C4. **S. Ebadian**, R. Freeman, and N. Shah, “[Efficient Resource Allocation with Secretive Agents](#),” in *Proc. of 31st Int. Joint Conf. on Artificial Intelligence (IJCAI’22)*, pp. 272–278, 2022.
- C3. **S. Ebadian**, D. Peters, and N. Shah, “[How to Fairly Allocate Easy and Difficult Chores](#),” in *Proc. of 21st Int. Conf. on Autonomous Agents and MultiAgent Systems (AAMAS’22)*, pp. 372–380, 2022.
- C2. **S. Ebadian** and X. Huang, “[Fast Algorithm for \$k\$ -Truss Discovery on Public-Private Graphs](#),” in *Proc. of 28th Int. Joint Conf. on Artificial Intelligence (IJCAI’19)*, pp. 2258–2264, 2019.
- C1. **S. Ebadian** and H. Zarrabi-Zadeh, “[A Simple Randomized Algorithm for All Nearest Neighbors](#),” in *Proc. of 31st Canadian Conf. on Computational Geometry (CCCG’19)*, pp. 94–98, 2019.
Invited to the special issue of the journal of Computational Geometry.

JOURNAL PUBLICATION

(Authors are listed alphabetically in all papers)

- J1. **S. Ebadian**, A. Kahng, D. Peters, and N. Shah, “[Optimized Distortion and Proportional Fairness in Voting](#),” in *ACM Transactions on Economics and Computation*, (**TEAC**), Vol. 12, Issue 1, pp. 1–39, 2024.

ACADEMIC SERVICE

- **Program Committee Member:** AAAI (2025, 2024, 2023), NeurIPS 2024, AIES (2024, 2023)
- **Journal Reviewer:** Journal of Artificial Intelligence (AIJ), Games and Economic Behavior (GEB), ACM Transactions on Economics and Computation (TEAC), SIAM Journal on Discrete Mathematics (SIDMA), Journal of Mathematical Social Sciences (JMSS)
- **Conference Reviewer:** EC 2024, SODA 2024, SAGT 2021

TEACHING EXPERIENCE

- **Teaching Assistant**, Department of Computer Science, University of Toronto
 - CSC2421 Mathematical Foundations of Algorithmic Fairness Winter 2024
 - CSC473 Advanced Algorithm Design Winter 2024
 - CSC263 Data Structures and Analysis Summer 2021, Summer 2024, and Fall 2024
 - CSC2412 Algorithms for Private Data Analysis Winter 2023
 - CSC373 Algorithm Design, Analysis, and Complexity (Lead TA) Fall 2023
 - CSC373 Algorithm Design, Analysis, and Complexity Fall 2021 and Summer 2022
 - CSC303 Social and Economic Networks Winter 2021 and Winter 2023
 - CSC304 Algorithmic Game Theory and Mechanism Design Fall 2022
 - CSC2556 Algorithms for Collective Decision Making Winter 2022
- **Teaching Assistant**, Computer Engineering Department, Sharif University of Technology
 - Design and Analysis of Algorithms Fall 2017, 2018, and 2019
 - Discrete Structures Spring 2019
 - Algorithmic Game Theory Spring 2019
 - System Analysis and Design Fall 2018 and Spring 2019
 - Data Structures and Algorithms Spring 2016
- **Instructor**, Iranian National Olympiad in Informatics Summer Camp 2016, 2017, and 2020
Taught advanced algorithms, data structures, and graph theory to students preparing for the IOI.
- **Lecturer**, Allameh Helli High School 2015 – 2016 and Fall 2019
Taught algorithms and data structures to students preparing for the Iranian National Olympiad in Informatics (INOI).

VOLUNTEER ACTIVITIES

- **Member of the Scientific Committee** of National Programming Contests
Designed programming contests and authored algorithmic problems.
 - West Asia ACM ICPC Regional Contest 2018 – 2019
 - Iran’s IOI Team Selection Exams 2016 – 2019
 - INOI Summer Camp Exams 2015 – 2017 and 2024
- **Task Preparation System** for **IOI 2017** [[Technical Report](#), [GitHub](#)] 2016 – 2017
Developed a system used by the Scientific Committee for preparing IOI tasks. Used at IOI 2017 and 2019.

- **Executive Director** of the **3rd Winter Seminar Series (WSS)** at Sharif University of Tech. Fall 2017
A four-day event including 28 talks and 7 workshops in computer science and engineering with nearly 400 participants.
 - Raised \$25,000 funding through sponsorship. Led 50 volunteer staff members across 15 teams.
- **Elected Member and Vice President of Students' Scientific Chapter** 2016 – 2017
SSC is the sole student committee concerned with directing the extracurricular activities who are elected by all students of the computer engineering department for a one-year term.
 - Organized 14 workshops, 13 talks, 2 competitions, 2 seminars, 2 research programs, and 9 other events.