Alireza Haqi

Ph.D. Student in Computer Science, Stanford University
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Education

Stanford University Fall 2024–Present
Ph.D. in Computer Science *Stanford, CA, USA*
Advisors: Nima Anari and Moses Charikar.

Sharif University of Technology Fall 2020–Summer 2024
B.Sc. in Computer Engineering *Tehran, Iran*
GPA: 3.95/4.00.

Publications and Preprints

1. **Parallel Sampling via Autospeculation**. Nima Anari, Carlo Baronio, CJ Chen, **Alireza Haqi**, Frederic Koehler, Anqi Li, and Thuy-Duong Vuong. *Proceedings of the 58th Annual ACM Symposium on Theory of Computing (STOC)*. 1168–1179, 2026.
2. **Improving Order with Queues**. Andreas Karrenbauer, Leonie Wennmann, Kurt Mehlhorn, Pranabendu Misra, Paolo Luigi Rinaldi, Anna Twelsiek, Siavash Rahimi Shateranloo, and **Alireza Haqi**. *Journal of Combinatorial Optimization*. 51(3):39, 2026.
3. **Fast Spanning Tree Sampling in Broadcast Congested Clique**. Nima Anari and **Alireza Haqi**. *arXiv preprint arXiv:2603.25018*. 2026.
4. **Constant-Stretch Rounding on the Hypersimplex**. Nima Anari, **Alireza Haqi**, and Eric Ma. *arXiv preprint arXiv:2606.00996*. 2026.
5. **On Thin Perfect Matchings up to Polylogarithmic Factors**. **Alireza Haqi** and Shayan Oveis Gharan. *arXiv preprint arXiv:2606.01330*. 2026.
6. **Almost Optimal Massively Parallel Algorithms for k-Center Clustering and Diversity Maximization**. **Alireza Haqi** and Hamid Zarrabi-Zadeh. *Proceedings of the 35th ACM Symposium on Parallelism in Algorithms and Architectures (SPAA)*. 2023. Outstanding Paper.

Research Experience

Graduate Research Fall 2024–Present
Stanford University *Stanford, CA, USA*

- Research on sampling, Markov chains, randomized algorithms, and parallel/distributed algorithms.
- Current projects include parallel sampling, broadcast congested clique algorithms, rounding on the hypersimplex, and thin matching problems.

Research Assistant October 2022–September 2024
University of Washington *Remote*

- Worked on theoretical computer science problems in approximation, combinatorics, and randomized algorithms.

Research Assistant July 2023–November 2023
Max Planck Institute *Saarbrucken, Germany*

- Continued research on ordering and queueing problems in combinatorial optimization.

Research Assistant July 2022–September 2022
Max Planck Institute *Saarbrucken, Germany*

- Collaborated on combinatorial optimization research that led to work on improving order with queues.

Research Assistant February 2022–July 2022
Sharif University of Technology *Tehran, Iran*

- Worked on massively parallel algorithms for clustering and diversity maximization.

Teaching and Academic Service

Young Scholar Club and Allame Helli 10 Fall 2021–Summer 2024
Mathematics Olympiad Tutoring and Instruction *Iran*

- Tutored combinatorics and olympiad mathematics for nationally competitive students.
- Taught geometry, number theory, and algebra to high school olympiad students.

Teaching Assistant Spring 2023
Convex Optimization, Sharif University of Technology *Tehran, Iran*

- Prepared course materials for Professor Mahdi Jafari's convex optimization course.

National Committee of Olympiad in Informatics Winter 2022–Summer 2024
Committee Member *Iran*

- Proposed problems, conducted exams, and taught students for national informatics olympiad training.

Honors

- Gold Medal, International Mathematical Olympiad, 2020.
- Silver Medal, Romanian Masters of Mathematics, 2020.
- Gold Medal, National Mathematics Olympiad, 2019.
- Silver Medal, National Mathematics Olympiad, 2018.

Selected Coursework and Technical Skills

Graduate coursework and topics: Machine Learning (CS229), Information Theory and Statistics (Stats 311), Incentives in Computer Science / Algorithmic Game Theory (CS269I), MCMC methods, Gibbs sampling, Langevin dynamics, stochastic differential equations, geometry of polynomials, log-concave polynomials, C-Lorentzian polynomials, and massively parallel computation.

Programming: Python (NumPy, Matplotlib, Pandas), C/C++, SQL, Java.