

Mohammad Roghani

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EDUCATION

Stanford University, <i>Ph.D. in Management Science and Engineering</i> • Advisors: Amin Saberi, Aviad Rubinstein	2021 – Present Stanford, CA
Stanford University, <i>M.Sc. in Management Science and Engineering</i>	2021 – 2023 Stanford, CA
Sharif University of Technology <i>B.Sc. in Software Engineering</i>	2015 – 2020 Tehran, Iran

RESEARCH INTERESTS

- Theoretical Computer Science
- Sublinear Algorithms
- Dynamic Algorithms
- Online Algorithms

PUBLICATIONS

- **Hardness of Approximate Sperner and Applications to Envy-Free Cake Cutting**
R. Gao, M. Roghani, A. Rubinstein, A. Saberi.
IEEE Symposium on Foundations of Computer Science (**FOCS 2024**).
- **Bipartite Matching in Massive Graphs: A Tight Analysis of EDCS**
A. Azarmehr, S. Behnezhad, M. Roghani.
International Conference on Machine Learning (**ICML 2024**).
- **Sublinear Algorithms for TSP via Path Covers**
S. Behnezhad, M. Roghani, A. Rubinstein, A. Saberi.
International Colloquium on Automata, Languages and Programming (**ICALP 2024**).
- **Approximating Maximum Matching Requires Almost Quadratic Time**
S. Behnezhad, M. Roghani, A. Rubinstein.
ACM Symposium on Theory of Computing (**STOC 2024**).
- **Fully Dynamic Matching: $(2 - \sqrt{2})$ -Approximation in Polylog Update Time**
A. Azarmehr, S. Behnezhad, M. Roghani.
ACM-SIAM Symposium on Discrete Algorithms (**SODA 2024**).
- **Local Computation Algorithms for Maximum Matching: New Lower Bounds**
S. Behnezhad, M. Roghani, A. Rubinstein.
IEEE Symposium on Foundations of Computer Science (**FOCS 2023**).
- **Sublinear Time Algorithms and Complexity of Approximate Maximum Matching**
S. Behnezhad, M. Roghani, A. Rubinstein.
ACM Symposium on Theory of Computing (**STOC 2023**).
- **Beating Greedy Matching in Sublinear Time**
S. Behnezhad, M. Roghani, A. Rubinstein, A. Saberi.
ACM-SIAM Symposium on Discrete Algorithms (**SODA 2023**).
- **Improved Online Contention Resolution for Matchings and Applications to the Gig Economy**
T. Pollner, M. Roghani, A. Saberi, D. Wajc.
ACM Conference on Economics and Computation (**EC 2022**).
- **Sequential Importance Sampling for Estimating Expectations over the Space of Perfect Matchings**
Y. Alimohammadi, P. Diaconis, M. Roghani, A. Saberi.
Annals of Applied Probability 33 (2), 799-833 .

- **Beating the Folklore Algorithm for Dynamic Matching**
M. Roghani, A. Saberi, D. Wajc.
Innovations in Theoretical Computer Science (**ITCS 2022**).
- **Complexity of Computing the Anti-Ramsey Numbers for Paths**
S.A. Amiri, A. Popa, M. Roghani, G. Shahkarami, R. Soltani, H. Vahidi.
International Symposium on Mathematical Foundations of Computer Science (**MFCS 2020**).
- **Some Results on Dominating Induced Matching**
S. Akbari, H. Baktash, A. Behjati, A. Behmaram, M. Roghani.
Graphs and Combinatorics 38 (3), 1-8
- **TPS (Task Preparation System): A Tool for Developing Tasks in Programming Contests**
K. Mirjalali, A.K. Mohtashami, M. Roghani, H. Zarrabi-Zadeh.
Olympiads in Informatics, 2019, Vol. 13, 209 - 215.

HONORS AND AWARDS

- Recipient of the Dantzig-Lieberman Operations Research **Graduate Fellowship**, United States, 2024.
- Recipient of the Krishnan Shah **Graduate Fellowship**, United States, 2023.
- Recipient of the Charles and Katharine Lin **Graduate Fellowship**, United States, 2022.
- Recipient of the Eltoukhy Family **Graduate Fellowship**, United States, 2021.
- Recipient of Stanford University **Doctoral Fellowship**, United States, 2021.
- **Gold Medal** in the National Olympiad in Informatics, Iran, 2014.
- **Silver Medal** in the Asia Pacific Olympiad in Informatics (APIO), Indonesia, 2015.
- **2nd, 3rd Team** in Regional Contests of ACM-ICPC West Asia Region, Tehran Site, respectively in 2015 and 2017.

SERVICES

I have reviewed several papers at theoretical computer science conferences such as **AAAI 2021, APPROX 2022, ESA 2022, SODA 2023, ICALP 2023, FOCS 2023, SODA 2024, SOSA 2024, STOC 2024, ICALP 2024, ESA 2024**.

TEACHING

- **Teaching Assistant at Stanford University:** Market Design for Engineers, Design and Analysis of Algorithms.
- **Teaching Assistant at Sharif University of Technology:** Design of Algorithms, Data Structures, Probability and Statistics, Discrete Structures.

INTERNSHIPS

Microsoft Research <i>Research Intern at Algorithm Group</i>	June. 2024 – September. 2024 Redmond, WA
Uber Technologies Inc <i>Applied Scientist Intern at Pricing Team</i>	June. 2023 – September. 2023 San Francisco, CA
Uber Technologies Inc <i>Software Engineering Intern at Pricing Team</i>	June. 2022 – September. 2022 San Francisco, CA
Max Planck Institute for Informatics <i>Research Intern at Algorithm and Complexity Group</i>	July. 2019 – August. 2019, January 2020 – February 2020 Saarbrücken, Germany
University of Tartu <i>Research Intern</i>	July. 2018 – September. 2018 Tartu, Estonia