Mohammad Roghani

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EDUCATION

Stanford University, 2021 – Present
Ph.D. in Management Science and Engineering Stanford, CA

- Advisors: Aviad Rubinstein, Amin Saberi

Stanford University, 2021 – 2023
M.Sc. in Management Science and Engineering Stanford, CA

Sharif University of Technology 2015 – 2020
B.Sc. in Software Engineering Tehran, Iran

RESEARCH INTERESTS

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

PUBLICATIONS (AUTHOR NAMES IN ALPHABETICAL ORDER)

- **A 0.51-Approximation of Maximum Matching in Sublinear $n^{1.5}$ Time**
  S. Mahabadi, M. Roghani, J. Tarnawski.
  International Colloquium on Automata, Languages and Programming (**ICALP 2025**).

- **Stable Matching with Interviews**
  I. Ashlagi, J. Chen, M. Roghani, A. Saberi.
  Innovations in Theoretical Computer Science (**ITCS 2025**).

- **Sublinear Metric Steiner Tree via Improved Bounds for Set Cover**
  S. Mahabadi, M. Roghani, J. Tarnawski, A. Vakilian.
  Innovations in Theoretical Computer Science (**ITCS 2025**).

- **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.
- **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.

INTERNSHIPS & VISITS

Microsoft Research   June. 2024 – September. 2024
Research Intern at Algorithm Group   Redmond, WA

Simons Institute for the Theory of Computing   May. 2024 – August. 2024
Visiting Graduate Student at Sublinear Algorithms Program   Berkeley, CA

Uber Technologies Inc   June. 2023 – September. 2023
Applied Scientist Intern at Pricing Team   San Francisco, CA

Simons Institute for the Theory of Computing   September. 2022 – December. 2022
Visiting Graduate Student at Data-Driven Decision Processes Program   Berkeley, CA

Uber Technologies Inc   June. 2022 – September. 2022
Software Engineering Intern at Pricing Team   San Francisco, CA

Max Planck Institute for Informatics   July. 2019 – August. 2019, January 2020 – February 2020
Research Intern at Algorithm and Complexity Group   Saarbrücken, Germany

University of Tartu   July. 2018 – September. 2018
Research Intern at Theory Group   Tartu, Estonia

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.

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**, **STACS 2025**, **IPCO 2025**, **SODA 2025**.