

Mohammad Roghani

✉ roghani@stanford.edu

EDUCATION

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

- Advisors: Amin Saberi, Aviad Rubinfeld

Stanford University, 2021 – 2022
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
- Sublinear Algorithms
- Dynamic Algorithms
- Online Algorithms

PUBLICATIONS

- **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. Rubinfeld.
64th IEEE Symposium on Foundations of Computer Science (**FOCS 2023**).
- **Sublinear Time Algorithms and Complexity of Approximate Maximum Matching**
S. Behnezhad, M. Roghani, A. Rubinfeld.
Annual ACM Symposium on Theory of Computing (**STOC 2023**).
- **Beating Greedy Matching in Sublinear Time**
S. Behnezhad, M. Roghani, A. Rubinfeld, 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 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**.

TEACHING

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

INTERNSHIPS

Uber Technologies Inc June. 2023 – September. 2023
Applied Scientist Internship San Francisco, CA

- Working in the rider surge pricing team on designing and implementing pricing algorithms.

Uber Technologies Inc June. 2022 – September. 2022
Software Engineering Internship San Francisco, CA

- Working in the rider surge pricing team on designing and implementing pricing algorithms.

Max Planck Institute for Informatics July. 2019 – August. 2019, January 2020 – February 2020
Research Internship Saarbrücken, Germany

- Welfare approximation in coordination games on graphs.
- Complexity of computing the anti-Ramsey numbers for paths.

University of Tartu July. 2018 – September. 2018
Research Internship Tartu, Estonia

- Design and implementation of a high-level quantum programming language in C++ that translates to different quantum assembly languages such as QASM.

VOLUNTEER EXPERIENCES

IOI (International Olympiad in Informatics) July. 2016 – August. 2017
Software Developer Tehran, Iran

- Development of task preparation system (TPS) that has been used for preparing programming tasks in International Olympiad in Informatics (IOI) 2017 in Tehran. It has both a command-line interface that developed in bash and a web interface that developed in Django. The report of this project can be found in the publications section.

OTHER ACTIVITIES

- **ACM-ICPC** Asia Tehran Regional Contest 2019 Scientific Committee
- **International Olympiad in Informatics** 2017 and 2019 Host Scientific Committee
- **International Olympiad in Informatics** 2018 Task Author
- **National Olympiad in Informatics** (2015-2019) Scientific Committee
 - * Teaching algorithms and graph theory
 - * Designing problems for training camps
 - * Preparing programming contests for selecting Iran national team