Yeganeh Alimohammadi

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Education

2018–2023 (expected)	**PhD, Management Science and Engineering**, *Stanford University*, GPA: 4.13. Operations Research Advisor: Amin Saberi
2014–2018	**B.Sc., Computer Engineering**, *Sharif University of Technology*, Iran, GPA 19.4/20. Thesis: "On the Maximum Bicliques in Convex Graphs." Advisor: Hamid Zarrabi-Zadeh Minor: Mathematics

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Research Interests

My research interest is in stochastic operations research and its applications to health policy and economics. I combine techniques from computer science, probability theory, economics, and operations research to develop theoretical insights for practically motivated problems.

Fellowships & Awards

2020-2022	***Dantzig-Lieberman Operations Research Fellowship***, *Winter & Spring 2020* , Stanford.
Summer 2017	Recipient of the scholarship for undergraduate research at **Princeton University**, NJ.
Summer 2016	Recipient of the scholarship for undergraduate research at **University of Delaware**, DE.
2014-2018	Recipient of the grant for undergraduate studies **National Elites Foundation**, Iran.
2014	***Bronze Medal*** in the 55th International Mathematical Olympiad, South Africa.
2013	***Gold Medal*** in the 32th Iranian National Mathematical Olympiad.

Preprints and Publications

Jul. 2021	**Yeganeh Alimohammadi**, *Christian Borgs and Amin Saberi*, Algorithms Using Local Graph Features to Predict Epidemics. To be appeared in ACM-SIAM Symposium on Discrete Algorithms (SODA'22) Poster presented at WOLA 2021
Jun. 2021	**Yeganeh Alimohammadi**, *Persi Diaconis, Mohammad Roghani and Amin Saberi*, Sequential Importance Sampling for Estimating Expectations over the Space of Perfect Matchings, (manuscript submitted to Annals of Applied Probability). arXiv:2107.00850
Jun. 2021	**Yeganeh Alimohammadi**, *Nima Anari, Kirankumar Shiragur, and Thuy-Duong Vuon*, Fractionally log-concave and sector-stable polynomials: Counting planar matchings and more. Appeared in proceedings of the Fifty-Third Annual ACM Symposium on Theory of Computing (STOC'21)
Apr. 2021	**Yeganeh Alimohammadi**, *Christian Borgs and Amin Saberi*, Locality of Random Digraphs on Expanders, (manuscript submitted to Annals of Probability). arXiv:2103.09952 [math.PR]
Apr. 2021	*Mohammad Akbarpour*, **Yeganeh Alimohammadi**, *Shengwu Li and Amin Saberi*, The Value of Excess Supply in Spatial Matching Markets. Presented in National Bureau of Economic Research Market Design Working Group Meeting (Fall 2021), arXiv:2104.03219 [cs.DS]

Feb. 2021 (working paper)	**Yeganeh Alimohammadi**, *Kirankumar Shiragur, Ramesh Johari, David Scheinker, Kevin Schulman, and Kristan Staudenmayer*, Relative-Risk and the Assessment of School Safety in the COVID-19 Pandemic: Schools May Offer Students Shelter from the Storm. Health Management, Policy, and Innovation, volume 5, Issue 1, special issue on COVID-19, 2021

Other Research Experiences

Fall 2020	**Los Angles Unified School District (LAUSD)**, *Advising their reopening plans*. LAUSD, a district with nearly 700,000 students and 70,000 staff, had to close their schools due to COVID-19 pandemic. We developed a novel approach to policy comparison via discrete network models of epidemic spread, that explicitly capture the dynamics among small cohorts of students and teachers in schools. With empirical calibration of this underlying network model, we advised the district on the testing strategy to ensure and support a successful reopening of schools.

Undergraduate Research Experiences

Summer 2017	**Princeton University**, *Undergraduate Intern*, Advisor: Mark Braverman. Project topic: distributing information among strategic traders in dynamic markets.
Summer 2016	**University of Delaware**, *Undergraduate Intern*, Advisor: Douglas Rizzolo. Project topic: distribution of maximum degree in trees constructed from branching processes.
Spring 2016-Fall 2017	**Sharif University of Technology**, *Department of Mathematics*, Advisor: Saieed Akbari. Project topic: labeling problem on graphs with a few distinct eigenvalues.

Work Experience

Summer 2021	**DE Shaw & Co**, *Quantitative Analyst Intern*. Applying statistical learning methods to predict the behavior of brokers in futures market.

Service & Outreach

2021- present	**Stanford MS&E Undergraduate Diversity in Research**, *Mentor*. Mentoring undergrads from underrepresented minorities conducting research in academia
2019- present	**Stanford Women in Math Mentoring**, *Board member and mentor*. Mentoring program that aims to reduce the gender gap in computational sciences
2020- present	**Persian Student Association**, *Board member*. A volunteer student organization to support Iranian students and promote an understanding of Persian culture at Stanford
Spring 2021	**Stanford Math Directed Reading Program**, *Mentor*. I mentor undergraduate students interested in mathematics to learn about applications of linear algebra in algorithm design. I have weekly meetings with my mentee for guidance and discussions.
Reviewer	**Journal**, *Management Science (2020)*.
	Conferences, *European Symposium on Algorithms (2019), ACM Symposium on Theory of Computing (2020),Symposium on Discrete Algorithms (2021),ITCS (2022),Symposium on Discrete Algorithms (2022)*.

Teaching Experiences

Stanford University

Fall, 2020	**MS&E 235/337: Network Structure and Epidemics**, Stanford. Responsibilities:

- Reading and commenting on final paper
- Designing and grading homework
- Running 1.5 hours of office hours per week

Sum., 2019	**CS 161: Design and Analysis of Algorithms**, Stanford.
	Responsibilities:

- Proof-reading and grading homework and final exam of 100 undergraduates
- Running 2 hours of office hours per week

<div style="color:gray">Sharif University of Technology</div>

Fall 2017	**Design and Analysis of Algorithms**, *Head TA*, Sharif University, Tehran, Iran.
Winter 2017	**Discrete Mathematics**, *Head TA*, Sharif University, Tehran, Iran.
Spring 2017	**Engineering Probability and Statistics** , Sharif University, Tehran, Iran.

<div style="color:gray">Teaching to High School Students</div>

2014-2015	**Farzanegan High School**, Tehran, Iran.
	Throughout my undergrad, I taught various topics to high school student, preparing for the Mathematical Olympiads. Topics I have taught include Combinatorics, Algebra, Number Theory, and problem solving skills

Talks

Oct. 2021	**The Value of Excess Supply in Spatial Matching Markets**, *INFORMS Annual Meeting*.
Oct. 2021	**Algorithms Using Graph Local Features to Predict Epidemics**, *Stanford Women in Theory Forum inaugural meeting*.
Jul. 2021	**Network models for school reopening during COVID**, *INFORMS Healthcare*, virtual.
Apr. 2021	**Increasing Supply vs Improving Matching: A Random Walk Down Spatial Markets** , *Highlights of Algorithms*, London School of Economics, London, UK.
Mar. 2021	, *Operations Research Seminar*, London Business School, London, UK.
Mar. 2021	, *Simons Institute for the Theory of Computing*, Berkeley.
Nov. 2020	**On the Local Limit of an Infection Process on Well-Connected Networks**, *Theory Lunch*, CS department, Stanford.

Computer Skills

Programming Languages	Python, C, C++, JAVA, MATLAB
Web & Database	HTML, DJango, MySQL, PostgreSQL
Type Setting	LaTeX