

Peng Shi

Academic Positions	USC Marshall School of Business , Los Angeles, CA <i>Assistant Professor, Department of Data Science and Operations</i> <i>Robert R. Dockson Assistant Professor in Business Administration</i>	2017—Present
	Microsoft Research New England , Cambridge, MA <i>Postdoctoral Researcher, Algorithmic Game Theory Group</i>	2016—2017
Education	Massachusetts Institute of Technology , Cambridge, MA <i>Ph.D. in Operations Research</i> – Advisor: Itai Ashlagi – Thesis: Prediction and Optimization in School Choice – GPA: 5.0/5.0	2011—2016
	Duke University , Durham, NC <i>B.S. in Mathematics and Computer Science (double major)</i> – GPA: 3.984/4.0	2006—2010
Journal Publications (Author names are all in alphabetical order, which is the convention in this field.)	P. Shi. “Optimal match recommendations in two-sided marketplaces with endogenous prices.” <i>Management Science</i>, Forthcoming. – An earlier version appeared in the ACM conference on Economics and Computation (EC), 2022. P. Shi. “Optimal matchmaking strategy in two-sided marketplaces.” (Lead article) <i>Management Science</i>, 69(3), 2023. – An earlier version was titled “Efficient matchmaking in assignment games with application to online platforms,” and appeared in EC 2020. P. Shi. “Optimal priority-based allocation mechanisms.” <i>Management Science</i>, 68(1), 2022. – An earlier version was titled “Assortment planning in school choice.” P. Pathak and P. Shi. “How well do structural demand models Work? Counterfactual predictions in school choice.” <i>Journal of Econometrics</i>, 222(1A), 2021. N. Arnosti and P. Shi. “Design of lotteries and waitlists for affordable housing allocation.” (Lead article) <i>Management Science</i>, 66(6), 2020. – An earlier version appeared in EC 2017. I. Ashlagi, M. Braverman, Y. Kanoria and P. Shi. “Clearing matching markets efficiently: informative signals and match recommendations.” <i>Management Science</i>, 66(5), 2020. – An earlier version appeared in EC 2017.	

I. Ashlagi and **P. Shi**. "[Optimal allocation without money: an engineering approach.](#)" *Management Science*, 62(4), 2016.

- An earlier version appeared in EC 2014.

P. Shi. "[Guiding school-choice reform through novel application of Operations Research.](#)" *Interfaces*, 45(2), 2015.

I. Ashlagi and **P. Shi**. "[Improving community cohesion in school choice via correlated-lottery implementation.](#)" *Operations Research*, 62(6), 2014.

S. Guha, K. Munagala and **P. Shi**. "[Approximation algorithms for restless bandit problems.](#)" *Journal of the ACM (JACM)*, 58(1), 2010.

- An earlier version appeared in the ACM-SIAM Symposium on Discrete Algorithms (SODA), 2009.

Working Papers

P. Shi. "Welfare-optimal policies for sponsored advertising in a two-sided marketplace." Working paper, 2025.

(Author names are all in alphabetical order, which is the convention in this field.)

P. Shi. "[The welfare effects of selling leads in a two-sided marketplace.](#)" Working paper, 2024.

- An earlier version appeared in the ACM conference on Economics and Computation (EC), 2024.

P. Shi and J. Yin.* "[Eliminating waste in cadaveric organ allocation.](#)" Working paper, 2023.

- An earlier version appeared in the 18th Conference in Web and Internet Economics (WINE 2022) and won the Best Paper Award.

* denotes a PhD student supervised by me.

Works in Progress

M. Alyakoob and **P. Shi**. "Estimating the quality of general contractors using city inspection data."

(Author names are all in alphabetical order, which is the convention in this field.)

M. Alyakoob and **P. Shi**. "On the adoption of digital platforms in the US home improvement industry."

P. Shi. "On the Pareto optimality of wasteful allocation mechanisms."

Refereed Conference Proceedings

P. Shi, V. Conitzer and M. Guo. "[Prediction mechanisms that do not incentivize undesirable actions.](#)" *Workshop on Internet & Network Economics (WINE)*, 2009.

- This is the only paper in this CV with a non-alphabetical order of authorship.

K. Munagala and **P. Shi**. "[The stochastic machine replenishment problem.](#)" *Integer Programming & Combinatorial Optimization (IPCO)*, 2008.

Teaching Experience	USC Marshall School of Business	
	DSO-570 The Analytics Edge: Data Models and Effective Decisions	2018-Present
	DSO-599 Introduction to Python for Business Analytics	2019-2020

Industry Experience	Akamai Technologies , Cambridge, MA	
	<i>Big Data Analytic Intern</i>	Summer, 2014
	Used Hadoop to quickly mine insights from multiple terabytes of router log files.	
	Used visualization and descriptive analytics to identify botnets and malicious port scanners. Designed and implemented an automated method to detect Distributed Denial of Service (DDoS) attacks using Brownian motion approximations.	

	Bless China International , Kunming, China	
	<i>Social Enterprise Analyst</i>	2010—2011
	Explored and evaluated business plans that helped poor and marginalized people groups in a financially self-sustaining way. Conducted surveys and focus groups to estimate market segments. Helped to launch a handicraft business and a restaurant. Supported the operations of the handicraft business by developing a point-of-sale system and a web store.	

	D. E. Shaw Group , New York, NY	
	<i>Quantitative Analyst Intern</i>	Summer, 2008
	Used microsecond-level data of the US stock market to develop a predictive model for intraday trading volume. Wrote code to use hundreds of machines in parallel to quickly process terabytes of data.	

Invited Presentations	The Welfare Effects of Selling Leads in a Two-Sided Marketplace	
	INFORMS Annual Meeting	2024
	UCLA DOTM Seminar	2024
	INFORMS Revenue Management and Pricing Conference	2024
	ACM Conference on Economics and Computation (EC)	2024
	MSOM Services SIG	2024
	Marketplace Innovation Workshop	2024
	USC Marshall Junior Faculty Seminar	2023

	Optimal Match Recommendations in Two-Sided Marketplaces with Endogenous Prices	
	SoCal OM Day (UCLA)	2024
	Queens's University Smith School of Business OM Seminar	2022
	Berkeley Haas OITM Seminar	2022
	Duke Fuqua DS Seminar	2022
	Cornel Johnson OTIM Seminar	2022
	UIUC Gies OM Seminar	2022
	Chicago Booth OM Seminar	2022
	Shanghai JiaoTong Antai College OM Seminar	2022
	Michigan Ross Technology and Operations Seminar	2022

CMU Tepper OM Seminar	2022
Columbia DRO-IEOR Seminar	2022
INFORMS Conference on Service Systems	2022
ACM Conference on Economics and Computation (EC)	2022
Marketplace Innovation Workshop (Plenary Talk)	2022

Optimal Matchmaking Strategy in Two-Sided Marketplaces

NYU Stern OM Seminar	2022
Cornell ORIE Colloquium	2022
University of Toronto Rotman Young Scholar Seminar	2022
Meta Data Science Seminar	2022
University of Tokyo Microeconomics Workshop	2022
MIT Data Science Lab Seminar	2022
University of Maryland Robert H. Smith School of Business DO&IT Seminar	2021
INFORMS Annual Meeting	2021
University of Southern California OM Seminar	2021
Wutong Forum at the Chinese University of Hong Kong, Shen Zhen	2021
Marketplace Innovation Workshop	2021
London Business School MSO Seminar	2021

Efficient Matchmaking in Assignment Games with Application to Online Platforms

Chicago Booth Applied Economics Workshop	2020
Marketplace Algorithms and Design Seminar	2020
ACM Conference on Economics and Computation (EC)	2020

Optimal Priority-Based Allocation Mechanisms

Global Challenges in Economics and Computation (GCEC) Workshop	2020
Stanford RAIN Seminar	2019
INFORMS Annual Meeting	2019

Clearing Matching Markets Efficiently

Simon's Institute Workshop on Platform Markets	2019
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Design of Lotteries and Waitlists for Affordable Housing Allocation

INFORMS Annual Meeting	2018, 2019
Caltech Bray Social Sciences Seminar Series	2018
UCI Paul Merage School of Business ODT Colloquium	2018
SoCal OM Day	2018

Optimal Forecast Disclosure in Ride-Sharing Platforms

INFORMS Annual Meeting	2018
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How (Not) to Allocate Affordable Housing

INFORMS Annual Meeting	2017
Mechanism Design for Social Good Workshop	2017

MIT Data Science Lab Seminar	2017
Communication Requirements and Informative Signaling in Matching Markets	
ACM Conference on Economics and Computation (EC)	2017
MATCH-UP Conference	2017
Forecasting and Counterfactuals in School Choice	
National Bureau of Economic Research (NBER) Market Design Workshop	2017
USC Conference in Honor of Daniel McFadden	2017
MIT Industrial Organizations Lunch	2017
Assortment Planning in School Choice	
Mechanism Design for Social Good Workshop	2017
MATCH-UP Conference	2017
INFORMS Annual Meeting	2015, 2016, and 2017
MSOM Conference	2016
Prediction and Optimization in School Choice	
USC Center for AI and Society Seminar	2017
ACM Conference on Economics and Computation (EC)	2017
USC Marshall School of Business	2016
Stanford Graduate School of Business	2016
Harvard Business School	2016
Columbia Business School	2016
Microsoft Research New England	2016
University of Toronto	2016
Chicago Booth School of Business	2015
Northwestern Kellogg School of Business	2015
Georgia Tech School of Industrial and Systems Engineering	2015
Optimal Allocation without Money: an Engineering Approach	
MIT ORC Seminar Series	2014
MIT Sloan Operations Management Seminar	2014
MSOM Conference	2014
ACM Conference on Economics and Computation (EC)	2014
INFORMS Annual Meeting	2013
Guiding School Choice Reform through Novel Applications of OR	
POMS Conference	2015
Invited Talk, Gordon College	2014
INFORMS Annual Meeting	2013
Improving Community Cohesion in School Choice	
INFORMS Annual Meeting	2013
Approximation Algorithms for Restless Bandit Problems	

**Professional
Activities**

- Associated Editor at Management Science (2023—Present)
- Senior Program Committee (SPC) member for EC 2024, Area Editor (AE) for EC 2022, Senior Program Committee (SPC) member for EC 2019, and Program Committee (PC) member for EC 2017.
- Ad hoc reviewer for Management Science (MS), Operations Research (OPRE), Manufacturing & Service Operations Management (M&SOM), Math of Operations Research (MOR), Productions and Operations Management (POM), Stochastic Systems, Transportation Research Part B (TRB), American Economic Review (AER), American Economic Journal (AEJ), Games and Economic Behavior (GEB), Journal of Machine Learning Research (JMLR), Journal of the ACM (JACM), ACM Transactions on Economics and Computation (TEAC), Workshop on Internet and Network Economics (WINE), Workshop on Economics and Computation (EC), and the Web Conference (WWW).
- Cluster chair for the market design cluster at the 2022 CORS/INFORMS International Conference.
- Program committee member for WWW 2018.
- Hiring committee co-chair for the Marshall OM group (2022—Present)
- USC Marshall Course Match System (MCMS) Implementation Team (2018).
- Member of INFORMS, MSOM and ACM since 2011.
- Worked with Boston Public Schools to reform the student assignment system. Proposed a plan that was implemented across Boston in 2014.

**Honors and
Awards**

- Shared the 2024 INFORMS Frederick W. Lanchester Prize for "the best contribution to operations research and the management sciences published in English in the past five years."
- Robert R. Dockson Assistant Professor in Business Administration (2023)
- WINE 2022 Best Paper Award (18th Conference on Web and Internet Economics)
- 2021 Golden Apple Teaching Award for the Best MSBA Core Instructor.
- 2020 MSOM Responsible Research in OM Award.
- 2019 DSO Department Excellence in Teaching Award.
- 2017 MSOM SIG Best Paper Award.
- 2017 ACM SIGecom Doctoral Dissertation Award.
- 1st place in the 2014 MIT ORC Best Student Paper Competition.
- 1st place in the 2013 INFORMS Public Sector Operations Research Best Paper Competition.
- 1st place in the 2013 INFORMS Doing Good with Good Operations Research Best Student Paper Competition.
- Silver Medals in the 2005 and 2006 International Mathematics Olympiad (IMO).
- Silver Medal in the 2006 International Olympiad of Informatics (IOI).
- 3rd place in North America in the 2005 USA Mathematics Olympiad (USAMO).
- Phi Beta Kappa Honors Society.
- Angier B. Duke Memorial Scholarship, 2006-2010.

**Personal
Information**

Citizenship: Canada

Languages: English and Chinese (Mandarin).

Hobbies: badminton, cooking, kayaking/canoeing, salsa dance, studying the Bible.