Hongyao Ma

Updated	January 2024	
Contact	1113 Kravis Hall	(857) 217-4985
	Columbia University	hongyao.ma@columbia.edu
	New York, NY, 10027	https://www.hongyaoma.com
Education	**Harvard University**, Cambridge, MA	
	Ph.D., Computer Science, Advisor: David C. Parkes.	May 2019
	M.S., Electrical Engineering	November 2014
	Xi'an Jiaotong University, Xi'an, Shaanxi, China	
	B.E., Electrical Engineering	July 2012
	The Special Class for the Gifted Young of China in XJTU	2006-2008
Appointments	**Assistant Professor**	July 2020-present
	Decision, Risk and Operations Division, Graduate School of Business	
	Columbia University, New York, NY	
	Linde Postdoctoral Scholar	June 2020
	California Institute of Technology, Pasadena, CA	
	Postdoctoral Research Scientist	2019-2020
	Uber Technologies, Inc., San Francisco, CA	
	Visiting Scholar	Aug-Oct 2019
	Simons Institute for the Theory of Computing, UC Berkeley, CA	
	Data Science Intern	Summer 2017
	Uber Technologies, Inc., San Francisco, CA	
	Research Intern	Summer 2013
	AT&T Labs Research, Florham Park, NJ	
Interests	Market design, Mechanism design, Bounded rationality, Online platforms	
Honors and Awards	ACM SIGecom Doctoral Dissertation Award	2020
	Caltech Young Investigator Lecturers in Engineering and Applied Science	2019
	AAMAS'19 Best Paper Award nomination	2019
	Siebel Scholarship	2017
	Derek Bok Center Certificate of Distinction in Teaching, Harvard University	2014
	Graduate Student Fellowship, SEAS, Harvard University	2012
	Outstanding Graduate (10/16,000), Xi'an Jiaotong University	2012
	UCLA-CSST Scholarship, UCLA	2011
Teaching	B5102: (EMBA) Operations Management, Columbia GSB	Spring 2022, 2023
	B6102: (MBA) Operations Management, Columbia GSB	Summer 2021
	B9137: (PhD, co-taught) DRO Topics Seminar, Columbia GSB	Spring 2021-2023
	Teaching Fellow, Harvard University: CS186, SPU27, ES156	2014-2015
Guest Lectures (Teaching)	Design and Operation of Ridesharing Platforms	
	- ECON 136: Market Design, Stanford University	March 2024
	- MS&E 230: Market Design for Engineers, Stanford University	May 2023
	- Econ G6600: Market Design, Columbia University	April 2023
	Randomized FIFO Mechanisms	
	- MS&E 230: Market Design for Engineers, Stanford University	May 2022
	- ECON 136: Market Design, Stanford University	March 2022

Spatio-Temporal Pricing for Ridesharing Platforms
- MS&E 230: Market Design for Engineers, Stanford University May 2022
- IEORE 8100: Matching markets and algorithms, Columbia University November 2021

Working Papers

Iterative Network Pricing for Ridesharing Platforms.
Chenkai Yu and Hongyao Ma. arXiv:2311.08392, 2023.

Randomized FIFO Mechanisms.
Francisco Castro, Hongyao Ma, Hamid Nazerzadeh, and Chiwei Yan. arXiv:1906.09713.
Major revision, Management science. Preliminary version in ACM EC'22, pp. 60-60, 2022.

Racial Preferences for Admission Are Strong Only at Highly Selective Colleges.
Yash Kanoria, Hongyao Ma, and Allen Sirolly. 2023.

Optimal Subscriptions for Ridesharing Platforms.
Ben Berger, Hongyao Ma, David C. Parkes and Shreyas Sekar. 2023.

Matching Queues, Flexibility and Incentives.
Francisco Castro, Peter Frazier, Hongyao Ma, Hamid Nazerzadeh, Chiwei Yan. arXiv:2006.08863.
Reject and resubmit, Manufacturing & Service Operations Management, 2021.

Social Choice with Non Quasi-linear Utilities.
Hongyao Ma, Reshef Meir, and David C. Parkes. arXiv:1804.02268.
Reject and resubmit, Econometrica. Preliminary version in ACM EC'18, pp. 49-49. 2018.

Incentivizing Reliability Through Penalty-bidding Mechanisms.
Hongyao Ma, Reshef Meir, Valentine Robu, Na Li, James Zou, and David C. Parkes.
Preliminary versions in AAMAS'20, AAMAS'19, and IJCAI 16.

Journal Publications

Spatio-Temporal Pricing for Ridesharing Platforms.
Hongyao Ma, Fei Fang, and David C. Parkes. Operations Research, 2022, 70(2): 1025-1041.
Preliminary version appeared in Proceedings 20th ACM EC'19, pp. 583-583.

Conference Proceedings

Price Cycles in Ridesharing Platforms. Chenkai Yu, Hongyao Ma, and Adam Wierman. Proceedings 19th International Conference on Web and Internet Economics (WINE 2023), pp. 618-636, 2023.

Penalty Bidding Mechanisms for Allocating Resources and Overcoming Present-Bias.
Hongyao Ma, Reshef Meir, David C. Parkes, and Elena Wu-Yan. Proceedings 19th International Conference on Autonomous Agents and Multiagent Systems (AAMAS'20), 2020.

Contingent Payment Mechanisms for Resource Utilization.
Hongyao Ma, Reshef Meir, David C. Parkes and James Zou. Proceedings 18th International Conference on Autonomous Agents and Multiagent Systems (AAMAS'19), pp. 422-430, 2019.

Ridesharing with Driver Location Preferences.
Duncan Rheingans-Yoo, Scott D. Kominers, Hongyao Ma, and David C. Parkes. Proceedings 28th International Joint Conference on Artificial Intelligence (IJCAI'19), 2019.

Generalizing Demand Response Through Reward Bidding.
Hongyao Ma, David C. Parkes and Valentin Robu. Proceedings 16th International Conference on Autonomous Agents and Multiagent Systems (AAMAS'17), pp. 60-68, 2017.

Contract Design for Energy Demand Response.
Reshef Meir, Hongyao Ma, and Valentin Robu. Proceedings 26th International Joint Conference on Artificial Intelligence (IJCAI'17), pp. 1202-1208, 2017.

Social Choice for Agents with General Utilities.
Hongyao Ma, Reshef Meir and David C. Parkes. Proceedings 25th International Joint Conference on Artificial Intelligence (IJCAI'16), pp. 345-351, 2016.

Incentivizing Reliability in Demand-Side Response.
Hongyao Ma, Valentin Robu, Na Li and David C. Parkes. Proceedings 25th International Joint Conference on Artificial Intelligence (IJCAI'16), pp. 352-358, 2016.

Inferring Smartphone Service Quality using Tensor Methods. Vaneet Aggarwal, Ajay Mahimkar, Hongyao Ma, Zemin Zhang, Shuchin Aeron, and Walter Willlinger. Proceedings 12th International Conference on Network and Service Management (CNSM'16), pp. 263-267, 2016.

Patent

Method and apparatus for determining localized service quality in a wireless network.
Ajay Mahimkar, Vaneet Aggarwal, Hongyao Ma, and Walter Willinger.
U.S. Patent 9,294,366[P]. 2016-3-22.

Talks

Iterative Network Pricing for Ridesharing Platforms
- Core Applied Science (CAS) Seminar, Uber Technologies Inc. San Francisco, CA 2023
- Operations, Information & Technology (OIT) Seminar, Stanford GSB, Stanford, CA 2023
- EconCS seminar, Harvard University, Boston, MA 2023
- Online Platforms and Policy Design, INFORMS'23, Phoenix, AZ 2023
- Dana Clyman Seminars, UVA Darden School of Business, Charlottesville, VA 2023
- Plenary talk, 8th Marketplace Innovation Workshop 2023
- Interdisciplinary market design seminar series, Columbia University, New York, NY 2023
- Economics and Computation seminar, Peking University 2023

Optimal Subscriptions for Ridesharing Platforms
- Design and Operation of Ridesharing Platforms, INFORMS'22, Indianapolis, IN 2022

Randomized FIFO Mechanisms
- Management Science Seminar, Shanghai Jiao Tong University 2022
- OITM Seminar, Berkeley Hass, Berkeley, CA 2022
- 23th ACM conference on Economics and Computation (EC'22), Boulder, CO 2022
- Microeconomics Workshop, The University of Tokyo 2022
- Core Analytics and Science, Uber Technologies Inc. 2022
- NBER Market Design Working Group Meeting 2021
- EconCS seminar, Harvard University, Boston, MA 2021
- Invited talk in Ridesharing Operations at INFORMS'21 2021
- Design of Online Platforms Workshop, EC'21 2021
- MSOM Service Management SIG Days 2021
- 6th Marketplace Innovation Workshop 2021
- Google Algorithms Workshop Series on Markets, Mobility, and the Mind 2021
- DRO Brown Bag Seminar, Columbia Business School 2021
- Online and Matching-Based Market Design Reunion, Simons Institute 2021
- Invited talk in Ridesharing Marketplaces at INFORMS'20 2020
- Matching Science Deep Dive, Uber Marketplace, San Francisco, CA 2020

Penalty Bidding for Allocating Resources and Overcoming Present-Bias
- Workshop on Operations of People-Centric Systems at EC'21 2021
- 19th Intl. Conf. on Autonomous Agents and Multiagent Systems, Auckland, NZ 2020

Spatio-Temporal Pricing for Ridesharing Platforms
- Data Science Institute Faculty Meeting, Columbia University, New York, NY 2020
- PIMCO Salon seminar series, California Institute of Technology, Pasadena, CA 2020
- Matching Science Deep Dive, Uber Marketplace, San Francisco, CA 2020
- Learning Lunch at Airbnb, San Francisco, CA 2019
- Invited talk in Optimization in Matching Markets at INFORMS'19, Seattle, WA 2019
- Invited Industry/Academia Session, 5th Marketplace Innovation Workshop, Stanford, CA 2019
- Invited INFORMS Boston Chapter meeting, Waltham, MA 2019
- SHARE Conference on Sharing Economy, Northeastern University, Boston, MA 2019
- 20th ACM conference on Economics and Computation (EC'19), Phoenix, AZ 2019
- Caltech Young Investigator Lecturers in Engineering and Applied Science, Pasadena, CA 2019
- CS seminar, Jacobs Technion-Cornell Institute at Cornell Tech, New York, NY 2019
- Information Systems seminar, NYU Stern IOMS, New York, NY 2019

- Operations Research and Statistics seminar, MIT Sloan, Cambridge, MA 2019
- Decision, Risk, and Operations seminar, Columbia Business School, New York, NY 2019
- Rigorous Systems Research Group Seminar Series, Caltech, Pasadena, CA 2018
- Operations Management seminar, USC Marshall School of Business, Los Angeles, CA 2018
- Invited talk in Mechanism Design at INFORMS'18, Phoenix, AZ 2018
- Invited talk in Market Design for Transportation Systems, INFORMS'18, Phoenix, AZ 2018
- NBER Market Design Working Group Meeting, Stanford, CA 2018
- Theory Seminar at Penn CS Theory Research Group, Philadelphia, PA 2018
- The AAMAS-IJCAI Workshop on Agents and Incentives in AI, Stockholm, Sweden 2018
- Workshop on Two-sided Marketplace Optimization at WSDM'18, Los Angeles, CA 2018
- Invited talk, the 3rd Cambridge Area Economics & Computation Day, Cambridge, MA 2017
- Invited talk in Matching and Dynamic Markets at IFORS 2017, Quebec City, Canada 2017

Contingent Payment Mechanisms for Resource Utilization
- 18th Intl. Conf. on Autonomous Agents and Multiagent Systems, Montreal, Canada 2019
- Invited talk in Mechanism Design at INFORMS'18, Phoenix, AZ 2018
- Special seminar, Faculty of Industrial Engineering and Management, Technion, Israel 2016
- 3rd Conference on Auctions, Market Mechanisms and Their Applications, Chicago, IL 2015

Social Choice with Non Quasi-linear Utilities
- 19th ACM conference on Economics and Computation (EC'18), Ithaca, NY 2018
- 16th International Workshop on Computational Social Choice, Troy, NY 2018
- 25th International Joint Conference on Artificial Intelligence (IJCAI'16), New York, NY 2016

Incentivizing Reliability in Demand-Side Response
- Market Design for Social Good at ACM EC'17, Cambridge, MA 2017
- 16th Intl. Conf. on Autonomous Agents and Multiagent Systems, Sao Paulo, Brazil 2017
- 25th International Joint Conference on Artificial Intelligence (IJCAI'16), New York, NY 2016

Advising and Service

Journal Refereeing: Autonomous Agents and Multi-Agent Systems, IEEE Intelligent Systems, Journal of Artificial Intelligence Research, Management Science, Manufacturing and Service Operations Management, Mathematics of Operations Research, Naval Research Logistics, Nature Machine Intelligence, Operations Research, The Review of Economic Studies, Transportation Research Part C

Conference Program Committee: EC 2019-2024, AAAI'19, AMEC/TADA'17, EC'16
Conference Refereeing: STOC'19, WINE'19, EC'15, IJCAI'15, AAMAS'15, ADT'15
Informs George Nicholson Student Paper Competition Committee 2022, 2023
INFORMS RMP Section Jeff McGill Student Paper Award Committee 2023

Co-organizer, the Marketplace Innovation Workshop 2024-present
Cluster chair, Revenue Management and Pricing cluster at INFORMS 2024

Co-organizer of Columbia IEOR-DRO seminars 2022-present
Columbia DRO faculty search committee 2023
Columbia DRO PhD program admission committee 2021-2024

Supervisor, Barnard Summer Research Institute 2023
Faculty advisor, the EC-America Program 2023
Thesis defense committee for Carlos Bonet 2023
Co-supervising undergraduate research and senior thesis in Math and CS, Harvard College
- Elena Wu-Yan. Penalty Bidding Mechanisms for Overcoming Present-Bias. 2018-2019
- Duncan Rheingans-Yoo. Ridesharing with Driver Location Preferences. 2017-2019
- Jimmy Jiang. Planning to Intervene Under Models of Time Inconsistency. 2016-2017
- Lisa Wang. Preference Elicitation Through Prices in Stable Matchings. 2015-2016

Outside Activities

Research collaboration with Uber Technologies, Inc. (unpaid).
Research collaboration with Grab Holdings, Inc. (unpaid).