

Hongyao Ma

UPDATED	September 2026	
CONTACT	1113 Kravis Hall Columbia University New York, NY, 10027	(857) 217-4985 hongyao.ma@columbia.edu https://www.hongyaoma.com
EDUCATION	Harvard University , Cambridge, MA Ph.D., Computer Science, Advisor: David C. Parkes. M.S., Electrical Engineering Xi'an Jiaotong University , Xi'an, Shaanxi, China B.E., Electrical Engineering The Special Class for the Gifted Young of China in XJTU	May 2019 November 2014 July 2012 2006-2008
APPOINTMENTS	Assistant Professor Decision, Risk and Operations Division, Graduate School of Business Columbia University, New York, NY Linde Postdoctoral Scholar California Institute of Technology, Pasadena, CA Postdoctoral Research Scientist Uber Technologies, Inc., San Francisco, CA Visiting Scholar Simons Institute for the Theory of Computing, UC Berkeley, CA Data Science Intern Uber Technologies, Inc., San Francisco, CA Research Intern AT&T Labs Research, Florham Park, NJ	July 2020-present June 2020 2019-2020 Aug-Oct 2019 Summer 2017 Summer 2013
HONORS AND AWARDS	ACM SIGecom Doctoral Dissertation Award Caltech Young Investigator Lecturers in Engineering and Applied Science AAMAS'19 Best Paper Award nomination Siebel Scholarship Derek Bok Center Certificate of Distinction in Teaching, Harvard University Outstanding Graduate (10/16,000), Xi'an Jiaotong University UCLA-CSST Scholarship, UCLA	2020 2019 2019 2017 2014 2012 2011
TEACHING	B5102: (EMBA) Operations Management, Columbia GSB B8148: (MBA and MS, co-taught) The Analytics Advantage B9137: (PhD, co-taught) DRO Topics Seminar, Columbia GSB B6102: (MBA) Operations Management, Columbia GSB	Spring 2022-2027 Spring 2024-2027 Spring 2021-2027 Summer 2021
GUEST LECTURES (TEACHING)	Design and Operation of Ridesharing Platforms - IEOR E8100: Market Design, Columbia University - MS&E 230: Market Design for Engineers, Stanford University - Econ G6600: Market Design, Columbia University Randomized FIFO Mechanisms - MS&E 230: Market Design for Engineers, Stanford University - ECON 136: Market Design, Stanford University Spatio-Temporal Pricing for Ridesharing Platforms - MS&E 230: Market Design for Engineers, Stanford University - IEORE 8100: Matching markets and algorithms, Columbia University	April 2024 May 2023 April 2023 May 2022 March 2022 May 2022 November 2021

WORKING PAPERS	Iterative Network Pricing for Ridesharing Platforms. Chenkai Yu and Hongyao Ma. arXiv:2311.08392, 2025.
	Randomized FIFO Mechanisms. Hongyao Ma, Francisco Castro, Hamid Nazerzadeh, Chiwei Yan. arXiv:1906.09713, 2025. Preliminary version in ACM EC'22, pp. 60-60.
	The Impact of Race-Blind and Test-Optional Admissions on Racial Diversity and Merit. Allen Sirolly, Hongyao Ma, and Yash Kanoria. SSRN 4873387, 2025. Preliminary version in ACM'EC 24, pp. 308-308.
	An Equilibrium Solver for a Dynamic Queueing Game. Denise Cerna, Chiwei Yan, Hongyao Ma. SSRN 5282750, 2025. Preliminary version in ACM'EC 25, pp. 666-666.
	Network-Based Detection of Wash Trading. Allen Sirolly, Hongyao Ma, Yash Kanoria, Rajiv Sethi. SSRN 5714122, 2025.
	Who Ate the Lunch? A Variational Bayes Algorithm for Detecting Refund Hunters. Chenkai Yu, Arpit Agarwal and Hongyao Ma. 2025. Preliminary version in ACM'EC 26.
	Potential-Based Greedy Matching for Dynamic Delivery Pooling. Hongyao Ma, Will Ma, and Matias Romero. arXiv 2502.16862, 2025. Finalist - INFORMS TSL Data Driven Challenge, 2025. Preliminary version in WINE'2025.
	Sequential Offering in On-Demand Platforms: On the Optimality of Greedy Ranking. Hongyao Ma, Will Ma, and Matias Romero. arXiv 2609.08001, 2026.
	Optimal Subscriptions for Ridesharing Platforms. Ben Berger, Hongyao Ma, David C. Parkes and Shreyas Sekar. 2023.
JOURNAL PUBLICATIONS	Matching Queues, Flexibility and Incentives. Chiwei Yan, Francisco Castro, Peter Frazier, Hongyao Ma, Hamid Nazerzadeh. arXiv:2006.08863. Manufacturing & Service Operations Management, 2026.
	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 Willinger. 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

The Impact of Race-Blind and Test-Optional Admissions on Racial Diversity and Merit
- NBER Market Design Working Group Meeting, Cambridge, MA 2025

An Equilibrium Solver for A Dynamic Queueing Game
- ORIE Colloquium, Cornell Tech, New York, NY 2025

Who Ate the Lunch? A Belief Propagation Algorithm for Identifying Refund Hunters
- Core Applied Science (CAS) Seminar, Uber Technologies Inc. San Francisco, CA 2025

Iterative Network Pricing for Ridesharing Platforms
- Waymo Product Data Science Seminar, Waymo LLC, San Francisco, CA 2025
- Driver Pricing Team Jam, Uber Technologies Inc. San Francisco, CA 2025
- Didi Product Science Seminar, Didi Chuxing Technology Company, 2025
- Deliveroo Scholar Sessions, Deliveroo Holdings Inc. 2024
- Surge Pricing Science Jam, Uber Technologies Inc. San Francisco, CA 2024
- EconCS Seminar, Department of Computer Science, Rutgers University, NJ 2024
- NBER Market Design Working Group Meeting, Stanford, CA 2024
- Rideshare Seminar Series, Lyft, Inc. San Francisco, CA 2024
- RAIN seminar, Stanford MS&E, Stanford, CA 2024
- 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

Dynamic Randomized FIFO Mechanism
- Ride-Hailing and Platform Operations, INFORMS'24, Seattle, WA 2024

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 Senior Program Committee: EC 2026	
	Conference Program Committee: EC 2019-2025, AAAI'19, AMEC/TADA'17, EC'16	
	Conference Refereeing: STOC'19, WINE'19, EC'15, IJCAI'15, AAMAS'15, ADT'15	
	Inform's 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	2022-2026
	Columbia DRO faculty search committee	2023, 2026
	Columbia DRO PhD program admission committee	2021-2026
	Faculty advisor, the EC-America Program	2023
	Supervisor, Barnard Summer Research Institute	2023
	Thesis defense committee for Carlos Bonet (Columbia DRO)	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
OUTSIDE ACTIVITIES	- 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
	Research collaboration with Uber Technologies, Inc. (unpaid).	2020-present
	Research collaboration with Grab Holdings, Inc. (unpaid).	2024-present
	Research discussions with Hyperbolic Labs (unpaid).	2024-2025