

Matthew Shou-Chung Shum

William D. Hacker Professor of Economics
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EMPLOYMENT HISTORY

Current position: California Institute of Technology, Division of Humanities and Social Sciences, William D. Hacker Professor of Economics, 2022-present;
(previous) J. Stanley Johnson Professor, 2016-2022; Professor of Economics, 2008-2016.

Amazon.com: Amazon scholar, Central economics team (Core AI), 2021-present.

Previous positions: Johns Hopkins University, Department of Economics, Professor, 2008; Associate professor (with tenure), 2004–2008; Assistant professor 2000–2004.

University of Toronto, Department of Economics, Assistant professor, 1998–2000.

Union Bank of Switzerland, Economics group, analyst, 1992-1993.

PROFESSIONAL HONORS:

Fellow of the Econometric Society (elected 2021).

Fellow of the International Association of Applied Econometrics (elected 2020).

EDUCATION

Stanford University, Economics, Ph.D 1998.

Thesis title: *Three Essays in Empirical Industrial Organization*. Supervisor: Frank A. Wolak.

Columbia University, Economics, B.A. 1992

RESEARCH

Publications:

64. “Combining Choices and Response Times in the Field: a Drift-Diffusion Model of Mobile Advertising” (with K. Chiong, R. Webb, and R. Chen). *Management Science*, to appear.

63. “Yogurts choose Consumers? Identification of Discrete-Choice Models via Two-Sided Matching” (with Odran Bonnet, Alfred Galichon, Yu-Wei Hsieh, and Keith O’hara). *Review of Economic Studies*, to appear.

62. “A Dynamic Model of Player Level-Progression Decisions in Online Gaming” (with Yi Zhao, Sha Yang, and Shantanu Dutta). *Management Science*, 2022.

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61. “Counterfactual Estimation in Semiparametric Discrete-Choice Models” (with Khai Chiong and Yu-wei Hsieh). In *Handbook of research methods and applications in empirical microeconomics*, Edward Elgar Publishers.
 60. “Inference in Estimators defined by Mathematical Programming” (with Yuwei Hsieh and Xiaoxia Shi). *Journal of Econometrics*, Vol. 226(2), pp. 248–268, 2022.
 59. “Some Remarks on CCP-based Estimators of Dynamic Models” (with Mogens Fosgerau, Emerson Melo, Jesper Sorensen). *Economic Letters*, Vol. 204 (2021).
 58. “Stability and Median Rationalizability for Aggregate Matchings” (with Federico Echenique, SangMok Lee, M. Bumin Yenmez). *Games*, Vol. 12(2).
 57. “Computing Moment Inequality Models using Constrained Optimization” (with Baiyu Dong and Yuwei Hsieh). *Econometrics Journal*, Vol. 24(3), pp. 399-416 (2021).
 56. “Time-Varying Risk Aversion? Evidence from Near-Miss Accidents” (with Y. Xin). Forthcoming, *Review of Economics and Statistics*.
 55. “Semiparametric Estimation of Dynamic Discrete Choice Models” (with Nick Buchholz and Haiqing Xu). *Journal of Econometrics*, Vol. 223(2), pp. 312-327 (2021).
 54. “Discrete Choice and Rational Inattention: a General Equivalence Result” (with Mogens Fosgerau, Emerson Melo, and Andre de Palma). *International Economic Review*, Vol. 61(4), pp. 1569–1589.
 53. “Equilibrium Effects of Superstition in the Housing Market” (with J. Chen). *Japanese Economic Review*, 70(3): 341-345 (2019).
 52. “Quality Overprovision in Cable Television Markets” (with G. Crawford and A. Shcherbakov). *American Economic Review*, 109(3): 956-995 (2019).
 51. “BLP-LASSO for Aggregate Discrete-Choice Demand with Rich Demographic Covariates” (with Ben Gillen, Sergio Montero, and Roger Moon). *Econometrics Journal*, 22: 262-281 (2019). “Editor’s Choice” article in this issue.
 50. “Is Advertising Informative? Evidence from Contradicated Drug Prescription” (with Guofang Huang and Wei Tan). *Quantitative Marketing and Economics*, 17: 135-160 (2019).
 49. “Testing the Quantal Response Hypothesis” (with Emerson Melo and Kirill Pogorelskiy). *International Economic Review*, 60(1): 53-74 (2019).
 48. “On Identification of a Beckerian Marriage Matching Model” (with Jianfei Cao and Xiaoxia Shi). *Economic Theory*, 67(2): 349-362 (2019).
 48. “Random Projection Estimation of Discrete-Choice Models with Large Choice Sets” (with Khai Chiong). *Management Science*, 65(1): 256-271 (2019).
 47. “Estimating Semiparametric Panel Multinomial Choice Models using Cyclic Monotonicity” (with Xiaoxia Shi and Wei Song). *Econometrica*, 86(2): 737-761 (2018).
 46. “Interactive Fixed Effects in the BLP Random Coefficients Demand Model” (with Roger

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- Moon and Martin Weidner). *Journal of Econometrics*, 206(2): 613-644 (2018).
45. “Words Get in the Way? Partial Identification of a Strategic Deliberation Model” (with Matias Iaryczower and Xiaoxia Shi). *Journal of Political Economy*, 126(2): 688-734 (2018).
44. “A Parimutuel-like Mechanism for Information Aggregation: A Field Test Inside Intel” (with Ben Gillen and Charles Plott). *Journal of Political Economy*, 125(4): 1075-1099 (August 2017).
43. “Bounding Causal Effects in Ecological Inference Problems: the Chilean Electoral Reform” (with Alejandro Corvalan, Emerson Melo and Robert Sherman). *Political Science Research and Methods*, 5(3): 555-565 (2017).
42. “Loss Aversion in Post-Sale Purchases of Consumer Products and their Substitutes” (with Colin Camerer and Debajyoti Ray). *American Economic Review: Papers and Proceedings*, 105: 376-380 (May 2015).
41. “Research Opportunities in Emerging Markets: an Inter-disciplinary Perspective from Marketing, Economics, and Psychology” (with K. Sudhir, J. Priester, D. Atkin, A. Foster, G. Iyer, G. Jin, D. Keniston, S. Kitayama, M. Mobarak, Y. Qian, I. Tewari, W. Wood). *Customer Needs and Solutions*, 2: 264-276 (Dec. 2015).
40. “Identification and Estimation of Online Price Competition with an Unknown Number of Firms” (with Yonghong An, Mike Baye, Yingyao Hu, and John Morgan). *Journal of Applied Econometrics* 32: 80-102 (2017).
39. “Duality in Dynamic Discrete Choice Models” (with Khai Chiong and Alfred Galichon). *Quantitative Economics*, 7: 83-115 (March 2016).
38. “A Simple Estimator for Dynamic Models with Serially-Correlated Unobservables” (with Yingyao Hu, Wei Tan, and Ruli Xiao). *Journal of Econometric Methods*, 6(1) (2017).
37. “Estimation and Inference in an Ecological Inference Model” (with Yanqin Fan and Robert Sherman). *Journal of Econometric Methods*, 5: 17-48 (January 2016).
36. “Efficiency and Bargaining Power in the Interbank Loan Market” (with Jason Allen, James Chapman, and Federico Echenique). *International Economic Review*, 57: 691-716 (May 2016).
35. “Cyber-shilling’ in Online Automobile Auctions: Evidence from a Field Experiment” (with David Grether and David Porter). *American Economic Journal: Microeconomics*, 7: 85-103 (August 2015).
34. “Demand Estimation with High-dimensional Product Characteristics” (with Ben Gillen and Roger Moon). *Advances in Econometrics (Vol. 34): Bayesian Model Comparison*, Emerald Publishing, 2015.
33. “Identifying Treatment Effects under Data Combination” (with Yanqin Fan and Bob Sherman). *Econometrica*, 82:811-822 (March 2014).
32. “Simple Two-Stage Inference for a Class of Partially Identified Models” (with Xiaoxia

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- Shi). *Econometric Theory*, 31: 493-520 (June 2015).
31. “Superstition and ‘Lucky’ Apartments: Evidence from Transaction-Level Data” (with Wei Sun and Guangliang Ye). *Journal of Comparative Economics*, 42: 109-117 (February 2014).
30. “Nonparametric Learning Rules from Bandit Experiments: the Eyes have It!” (with Yingyao Hu and Yutaka Kayaba). *Games and Economic Behavior*, 81:215-231 (September 2013).
29. “Identifying Dynamic Games with Serially-Correlated Unobservables” (with Yingyao Hu). *Advances in Econometrics (Vol. 31): Structural Econometric Models*, Emerald Publishing, 2013.
28. “Partial Identification in Matching Models” (with Federico Echenique and SangMok Lee). *Advances in Econometrics (Vol. 31): Structural Econometric Models*, Emerald Publishing, 2013.
27. “When do Secondary Markets Harm Firms?” (with Jiawei Chen and Susanna Esteban). *American Economic Review*, 103: 2911-2934 (December 2013).
26. “Nonparametric Identification of Auction Models with Non-Separable Unobserved Heterogeneity” (with Yingyao Hu and David McAdams). *Journal of Econometrics*, 174: 186-193 (June 2013).
25. “To Elect or to Appoint? Bias, Information, and Responsiveness of Bureaucrats and Politicians” (with Matias Iaryczowzer and Garrett Lewis). *Journal of Public Economics*, Vol. 97, pp. 230-244 (2013).
24. “The Revealed Preference Theory of Stable and Extremal Stable Matchings” (with Federico Echenique, SangMok Lee, and Bumin Yenmez). *Econometrica*, Vol. 81, pp. 153-171 (2013).
23. “Nonparametric Identification of Dynamic Models with Unobserved State Variables” (with Yingyao Hu). *Journal of Econometrics*, Vol. 171, pp. 32-44 (2012).
22. “The Value of Information in the Court: Get it Right, Keep it Tight” (with Matias Iarycowzer). *American Economic Review*, Vol. 102, pp. 202-237 (2012).
21. “The Money Pump as a Measure of Revealed Preference Violations” (with Federico Echenique and SangMok Lee). *Journal of Political Economy*, Vol. 119, pp. 1201-1223 (2011).
20. “Estimating first-price auctions with an unknown number of bidders: A misclassification approach” (with Yonghong An and Yingyao Hu). *Journal of Econometrics*, Vol. 157, pp. 328-341 (2010).
19. “Estimating a Tournament Model of Intra-firm Wage Differentials” (with Jiawei Chen). *Journal of Econometrics*, Vol. 155, pp. 39-55 (2010).
18. “Pairwise-Difference Estimation of a Dynamic Optimization Model” (with H. Hong).

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- Review of Economic Studies*, Vol. 77, pp. 273-304 (2010).
17. "Do Sales Tax Credits Stimulate the Automobile Market?" (with J. Chen and S. Esteban). *International Journal of Industrial Organization*, Vol. 28, pp. 397-402 (2010).
 16. "Do Mergers Improve Information? Evidence from the Loan Market" (with F. Panetta and F. Schivardi). *Journal of Money, Credit, and Banking*, Vol. 41, pp. 673-709 (2009).
 15. "Estimation Biases of Omitting Durability" (with Jiawei Chen and Susanna Esteban). *Journal of Econometrics*, Vol. 147, pp. 247-257 (2008).
 14. "Likelihood Ratio Tests between Parametric and Moment Condition Models" (with X. Chen and H. Hong). *Journal of Econometrics*, 141: 109-140 (2007).
 13. "Detecting Information Pooling: Analysts' Forecasts After Brokerage Firm Mergers" (with Serena Ng). *The B.E. Journal of Economic Analysis & Policy*, Volume 7, Issue 1, Article 60 (2007).
 12. "Nonlinear Pricing with Self-Control Preferences" (with S. Esteban and E. Miyagawa). *Journal of Economic Theory*, 135: 206-338 (July 2007).
 11. "Monopoly Quality Degradation in Cable Television" (with G. Crawford). *Journal of Law and Economics*, 50: 181-219 (February 2007).
 10. "Durable Goods Oligopoly with Secondary Markets: the Case of Automobiles," with S. Esteban. *RAND Journal of Economics*, Vol. 38, pp. 332-354 (2007).
 9. "Using Price Distributions to Estimate Search Costs" (with H. Hong). *RAND Journal of Economics*, 37: 257-275 (Summer 2006).
 8. "Learning and Experimentation in Pharmaceutical Demand," with G. Crawford. *Econometrica*, 73: 1137-1174 (July 2005).
 7. "The Effects of Advertising in Brand Loyal Markets: the Case of Breakfast Cereals." *Journal of Economics and Management Strategy*, 13: 241-272 (Summer 2004).
 6. "Rates of Information Aggregation in Common Value Auctions," with H. Hong. *Journal of Economic Theory*, 116: 1-40 (May 2004).
 5. "An Empirical Model of Learning and Spillovers in New Drug Entry," with A. Coscelli. *Journal of Econometrics*, 122: 213-246 (October 2004).
 4. "Empirical Likelihood-Based Model Selection Criteria for Moment Condition Models," with H. Hong and B. Preston. *Econometric Theory*, 19:923-943 (December 2003).
 3. "Econometric Models of Asymmetric Ascending Auctions," with H. Hong, *Journal of Econometrics*, 112: 327-358 (February 2003).
 2. "Increasing Competition and the Winner's Curse: Evidence from Procurement," with H. Hong, *Review of Economic Studies*, 69: 871-898 (October 2002).
 1. "Structural Estimation of Auction Models," with H. Hong, 1999. In *Game Practice:*

Contributions from Applied Game Theory, ed. Jurado, Tijs, Patrone. Kluwer Publishing Co.

Book volumes:

2. *Econometric Models for Industrial Organization* (World Science Lecture Notes in Economics). World Scientific, 2016.
1. *Advances in Econometrics (Vol. 31): Structural Econometric Models*. Edited by Eugene Choo and Matthew Shum. Emerald Publishing, 2013.

Working Papers/Work in Progress:

15. “Managing Congestion in Two-Sided Platforms” (with Caterina Calsamiglia, Laura Doval, Alejandro Robinson-Cortés).
14. “Rethinking Reference Dependence: Wage Dynamics and Optimal Stopping Rules in Taxis” (with Nick Buchholz and Haiqing Xu).
13. “The Impact of Privacy Measures on Online Advertising Markets” (with Miguel Alcobendas, Shunto Kobayashi, and Ke Shi).
12. “Passive and Active Attention to Baseball Telecasts: Implications for Content (Re-)Design” (with Xiao Liu and Kosuke Uetake).
11. “Reassessing the Firm Selection Hypothesis: New Evidence from Chinese Highways” (with Yi Niu).
10. “The Cushioning Effects of Biased Beliefs” (with Lawrence Jin and Mali Zhang)
9. “Media Bias and News Sharing on Social Networks: a Laboratory Study” (with Kirill Pogorelskiy). Revising for *Economic Journal*.
8. “Dynamic Labor Supply of Taxicab Drivers: a Semiparametric Optimal Stopping Model” (with Nick Buchholz and Haiqing Xu)
7. “Self-regulation Failures in the Field: Investigating Spillovers from Exercise to Food Choice” (with A. Buyalskaya).
6. “To Score or Not to Score? Estimates from a Sponsored Search Auction” (with Yu-wei Hsieh and Sha Yang). Revising for *International Economic Review*.
5. “Auctioneers as Market Makers: Managing Momentum in Chittagong Tea Auctions” (with Andrew Foster, Tanjim Hossain and Fahad Khalil)
4. “Public vs. Secret Reserve Prices in Auctions: Evidence from Combining Field and Lab Experiments” (with D. Grether and D. Porter)
3. “Nonparametric Tests for Common Values in First-Price Auctions” (with Phil Haile and Han Hong). NBER working paper #10105.

2. “Strategic Manipulation in Peer Performance Evaluation: Evidence from the Field” (with Yifei Huang, Xi Wu, and Jason Xiao)
1. “Money in Judicial Politics: Individual Contributions versus Collective Decisions” (with Matias Iaryczower and Gabriel Katz).

EDITORIAL ACTIVITIES

Department editor, *Management Science* (marketing desk), 2014-2021

Associate editor, *International Economic Review*, 2012-2020

PROFESSIONAL ACTIVITIES

Recent invited seminars: UC Berkeley, Wisconsin (virtual), LSE (virtual), Iowa State (virtual), Carnegie-Mellon (virtual), UCLA (virtual), Texas A&M, Princeton University, University of Michigan, ITAM (Mexico), Duke University, Universitat Autònoma de Barcelona, Pompeu Fabra, EIEF (Rome), Bocconi University

Recent invited talks at conferences: Yale Conference on Regulation and Antitrust of Online Markets; Paris digitization conference 2021; NBER Summer Institute, Industrial Organization Program Meeting (invited discussant); Workshop on Generalized Entropy and Related Topics (University of Copenhagen); Semiannual Marketing Camp (University of Washington, Seattle); American Economics Association Annual Meeting (Philadelphia, PA)

Organizing committees: Asia meeting of Econometric Society (2013, 2019), China meeting of Econometric Society (2019), Asia-Pacific Industrial Organization Conference (2017, 2019)

GRANTS

6. *Analysis of Organ Donation Policies in the Presence of Multi-Organ Donors*, grant from the One Legacy Foundation. Co-PIs: Federico Echenique, Laura Doval, Yi Xin.
5. *Analyzing Forced Habit Change from Covid-19 Using Large-Scale Data*, grant from the National Science Foundation (SES-2031287). Co-PIs: Colin Camerer, Lawrence Jin, Yi Xin, 2020-2021.
4. *Empirical Analyses of Committee Voting*, grant from the National Science Foundation (SES-1061266, joint with Matias Iaryczower), 2011-2013
3. *Empirical Analyses of Competitive Bidding*, grant from the National Science Foundation (SES-0003352, joint with Han Hong), 2000-2003
2. *Empirical Analyses of Competitive Bidding*, grant from SSHRC (Social Sciences and Humanities Research Council of Canada), 2000
1. Alfred P. Sloan Dissertation Fellowship (1997–98)

STUDENT SUPERVISION

Recent students (first placement):

Jeff Zeidel (NYU Abu Dhabi, postdoc), Anastasia Buyalskaya (HEC, Paris, France), Alejandro Robinson-Cortes (University of Exeter), Silvia Kim (American University), Mali Zhang (Boston Consulting Group), Jun Zhang (Nanjing Audit University), Yifei Huang (Microsoft Research), Sergio Montero (University of Rochester), Euncheol Shin (Korea Development Institute), Kyle Carlson (Twitter), Matt Chao (Williams College), Khai Chiong (UT Dallas)

Current supervision:

Shunto Kobayashi, Ke Shi

DEPARTMENTAL SERVICE

Computing committee; Graduate admissions committee (chair)

PERSONAL

Birthdate: February 21, 1970 (Houston, Texas, USA). Married, four children.

Languages: English, Chinese (Cantonese & Mandarin), German, Spanish, Farsi (elementary).

Interests: classical music, piano

Updated: April 2023.