Wayne Yuan Gao

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Academic Appointments

University of Pennsylvania:

    Assistant Professor, Department of Economics, 2020-current

    Faculty Affiliate, Warren Center for Network and Data Sciences, 2019-current

    Lecturer, Department of Economics, 2019-2020

Harvard University:

    Visiting Assistant Professor, Department of Economics, Spring 2022

Education

Ph.D. Economics, Yale University, 2014-2019
M.A. Economics, Duke University, 2012-2014
Bachelor of Economics and Finance, University of Hong Kong, 2009-2012

Publications

1. "Identification of Dynamic Nonlinear Panel Models under Partial Stationarity", with Rui Wang, arXiv:2401.00264. Accepted for publication in the *Journal of Econometrics*.

2. "Optimization via Strategic Law of Large Numbers," with Xiaohong Chen, Zengjing Chen, Xiaodong Yan, and Guodong Zhang. arXiv:2412.05604. Forthcoming *Proceedings of the National Academy of Science (Direct Submission)*.

3. "Identification of Semiparametric Panel Multinomial Choice Models with Infinite-Dimensional Fixed Effects", with Ming Li (November 2025), SSRN #3282293. Accepted for publication in the *Review of Economics and Statistics*.

4. "How Flexible is that Functional Form? Quantifying the Restrictiveness of Theories", with Drew Fudenberg and Annie Liang, forthcoming in *Review of Economics and Statistics*. Extended abstract in *Proceedings of the 22nd ACM Conference on Economics and Computation*, 2021, 497-498. (Award: Exemplary Artificial Intelligence and Computation Track Paper, ACM EC'21).

5. "Using Monotonicity Restrictions to Identify Models with Partially Latent Covariates", with Minji Bang, Andrew Postlewaite and Holger Sieg, *Journal of Econometrics*, 2023, 235(2), 892-921.

6. "Logical Differencing in Dyadic Network Formation Models with Non-Transferable Utilities", with Ming Li and Sheng Xu, *Journal of Econometrics*, 2023, 235(1), 302-324. (Award: The 2025 Arnold Zellner Award for the Best Theory Paper Published in the *Journal of Econometrics* 2023-2024*.*)

7. "Informal Risk Sharing with Local Information", with Attila Ambrus and Pau Milan, *Review of Economic Studies*, 2022, 89(5), 2329–2380.

8. "Nonparametric Identification in Index Models of Link Formation", *Journal of Econometrics, 2020, 215(2), 399-413.* (Award: The 2021 Arnold Zellner Award for Best Theory Paper Published in *Journal of Econometrics* 2019-2020*.*)

9. "Minimax Linear Estimation at a Boundary Point", *Journal of Multivariate Analysis*, 2018, 165, 262-269.

10. "Structural Inference from Reduced Forms with Many Instruments", with Peter C.B. Phillips, *Journal of Econometrics*, 2017, 199, 96-116.

11. "Informal Insurance Networks", with Eunyoung Moon, *B.E. Journal of Theoretical Economics*, 2016, 16, 455-484.

Working Papers

1. "ReLU-Based and DNN-Based Generalized Maximum Score Estimators", with Xiaohong Chen and Likang Wen, arXiv:2511.19121.

2. "Inference on Welfare and Value Fuctionals under Optimal Treatment Assignment", with Xiaohong Chen and Zhenxiao Chen, arXiv:2510.25607.

3. "Semiparametric Learning of Integral Functionals on Submanifolds", with Xiaohong Chen, arXiv:2507.12673.

4. "IV Regressions without Exclusion Restrictions", with Rui Wang, arXiv:2304.00626.

5. "A Partial Order on Preference Profiles", arXiv:2108.08465.

6. "Dynamic Heterogeneous Distribution Regression Panel Models, with an Application to Labor Income Processes", with Iván Fernández-Val, Yuan Liao and Francis Vella, arXiv:2202.04154. Revision and resubmission (2nd round) requested by *Quantitative Economics*.

7. "Two-Stage Maximum Score Estimator", with Sheng Xu and Kan Xu, arXiv: 2009.02854.

Work in Progress

1. Can LLMs Predict Human Behavior? A Measure of Their Pretrained Knowledge, with Sukjin Han and Annie Liang.

2. Tractable Identification of Strategic Network Formation Models with Unobserved Degree Heterogeneity, with Ming Li and Zhengyan Xu

3. Restrictiveness in Functional and Structural Settings, with Drew Fudenberg and Zhiheng You

4. Inference on Conditional Moment Inequality Models via Integrated ReLU Transformation, with Xiaohong Chen and Oriol Gonzalez-Casasus

Fellowships, Honors and Awards

- 2025 Arnold Zellner Award for the Best Theory Paper Published in the *Journal of Econometrics* 2023-2024.

- 2021 Arnold Zellner Award for the Best Theory Paper Published in the *Journal of Econometrics* 2019-2020.

- Exemplary Artificial Intelligence and Computation Track Paper, ACM Conference on Economics and Computation, 2021

- Arnold Zellner Thesis Award in Econometrics and Statistics, American Statistical Association, 2020

- Irving B. Kravis Certificate for Distinction in Undergraduate Teaching, Penn, 2020

- *Review of Economic Studies* European Tour, 2019

- George Trimis Prize for Distinguished Dissertation in Economics, Yale, 2019

Grants

- University Research Foundation Grant, UPenn: $25,228, Mar. 2022 - Feb. 2023

- Penn Undergraduate Research Mentoring Award, UPenn: $9,000, Summer 2021

Invited Seminar Presentations

2026(scheduled): Princeton, Harvard/MIT, UCSD, SMU(Texas). 2025: UT Austin, Toronto, Duke; 2024: Yale, Virginia, UCL, Warwick, WashU in St. Louis; 2023: Columbia; 2022: HKUST, Maryland, UCLA, Harvard and MIT, Chicago, Northwestern, Wisconsin-Madison; 2021: Arizona, Essex, NUS & SMU, Michigan, NYU; 2020: Michigan, Syracuse, U Toronto, USC, BU; 2019: Georgetown, UCSD, UC Berkeley, UCL, Northwestern, Wisconsin-Madison, UPenn, NYU, Princeton, HKU, CUHK, SMU, PSU, LSE*, KU Leuven*, Sciences Po* (*: *Review of Economic Studies* European Tour).

Conference and Workshop Presentations

2025: Cowles Conference on Econometrics, Greater New York Econometrics Conference; 2024: Southern Economic Association Annual Conference, North American Winter Meeting of the Econometric Society, North American Summer Meeting of the Econometric Society; 2023: North American Summer Meeting of the Econometric Society, CEME Conference for Young Econometricians (Georgetown); 2022: Pennsylvania Economic Theory Conference, Cowles Foundation Econometrics Conference, Asian Meeting of the Econometric Society, Greater New York Metropolitan Area Econometrics Colloquium; 2021: Asian Meeting of the Econometric Society, China Meeting of the Econometric Society; 2020: North American Winter Meeting of the Econometric Society; 2019: Network Econometrics Juniors' Conference (Northwestern), Microeconometrics Class of 2019 Conererence (Duke), 30th International Conference on Game Theory (Stony Brook), Conference on Network Science in Economics (Indiana-Bloomington); 2018: Warren Center Workshop On Trade & Diffusion of Shocks in Networks (Penn), HU-HUE-SMU Tripartite Conference (SMU), Conference on Network Science in Economics (Vanderbilt), North American Meeting of the Econometric Society (UC Davis); 2017: Asian Meeting of the Econometric Society (CUHK), Southern Economic Association Annual Meeting; 2016: Conference on Network Science in Economics (Stanford), Jerusalem Economics School (Hebrew)

Conference Organization

2024: NBER-NSF Time Series Conference at UPenn (program and organization committee), International Association of Applied Econometrics China Conference (program committee); 2023: North American Summer Meeting of the Econometric Society (program committee); 2021: China Meeting of the Econometric Society (program committee); 2019: 14th Greater New York Metropolitan Area Econometrics Colloquium at UPenn (program and organization committee), 30th International Conference on Game Theory at Stony Brook (session organizer)

Referee Services

American Economic Journal: Microeconomics, American Economic Review, American Economic Review: Insight, Journal of Business and Economic Statistics, Communication in Statistics, Econometrica, Journal of Econometrics, Economics Letters, Econometrics Journal, Econometrics and Statistics, Econometric Theory, Journal of Economic Behavior and Organization, Economic Development and Cultural Change, Economic Journal, Economics Letters, Econometric Reviews, Journal of Economic Theory, Games and Economic Behavior, Journal of International Development, Journal of Machine Learning Research, Journal of Mathematical Economics, National Science Foundation (Proposal Review), IEEE Transactions on Information Theory, International Economic Review, Intertional Journal of Game Theory, Review of Economics and Statistics, Review of Economic Studies, Journal of Political Economy, Quantitative Economics, Quarterly Journal of Economics

Department, University, and Professional Services

Pre-Major Advisor, School of Arts and Sciences, Penn
Co-Chair (2024-26), Ph.D. Admission Committee, Dept. of Economics, Penn
Discussant: AEA Annual Meeting 2022
Panelist, Gary Chamberlain Online Seminar in Econometrics
Member (2022-24), Master's Alumni Advisory Board, Dept. of Economics, Duke

Teaching

University of Pennsylvania:
ECON 8300: Topics in Advanced Econometrics (Fall 2022, 2023, Spring 2025)
ECON 7300: Econometrics I, Fundamentals (Fall 2023)
ECON 7310: Econometrics II, Methods & Models (Spring 2023, 2024, 2025, 2026)
ECON 712-008: Econometrics of Networks (Fall 2021)
ECON 2300/100: Statistics for Economists (Spring 2020, 2021, 2026; Fall 2021, 2022, 2023)
Harvard University:
ECON 2140: Econometric Methods (Spring 2022)