Jiguang Li

Ph.D. Candidate in Econometrics and Statistics, University of Chicago Booth School of Business
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Research Interests

My research develops Bayesian methods for robust inference and adaptive decision-making, especially in settings with latent structure, sequential data collection, or partial model specification. I draw on nonparametric Bayes, reinforcement learning, and statistical computing to study problems in econometrics and psychometrics.

Education

- **The University of Chicago Booth School of Business** **Chicago, IL** *Sep 2022 – Jun 2027 expected*
  - Ph.D. in Econometrics and Statistics; M.B.A. Advisor: *Veronika Ročková*.
  - Research areas: Bayesian statistics, reinforcement learning.
- **Yale University** **New Haven, CT** *Aug 2019 – May 2020*
  - M.A. in Statistics.
- **Middlebury College** **Middlebury, VT** *Sep 2015 – May 2019*
  - B.A. in Mathematics; B.A. in Computer Science.
  - Summa Cum Laude; Highest Honors in Mathematics; Davis UWC Scholar.

Publications and Preprints

- **Jiguang Li**, Sid Kankanala, and Veronika Ročková. "Empirical Likelihood with Generative AI." Submitted, 2026. [paper][code]
- Bengusu Nar, **Jiguang Li**, Veronika Ročková, and Panos Toulis. "Dynamic Treatment on Networks." Submitted, 2026. [paper]
- **Jiguang Li** and Henry Luo. "Robust Bayesian Optimization via Tempered Posteriors." Submitted, 2026. [paper][code]
- **Jiguang Li**, Robert Gibbons, and Veronika Ročková. "Deep Computerized Adaptive Testing." *Psychometrika*, 2026. [paper][code]
- **Jiguang Li**, Robert Gibbons, and Veronika Ročková. "Sparse Bayesian Multidimensional Item Response Theory." *Journal of the American Statistical Association*, 2025. [paper][code]

Technical Skills

Methods: Bayesian inference, nonparametric Bayes, reinforcement learning, Bayesian optimization, moment restriction models, latent-variable models, causal machine learning, high-dimensional statistics.
Programming: Python (PyTorch, PyMC3), R, Java, C, JavaScript, HTML, LaTeX.
Languages: Chinese (native), English (fluent), Spanish (intermediate), Italian (basic).

Research and Industry Experience

- **Applied Scientist Intern** — **Amazon.com, Inc.**
  Grocery Economics & Optimization Science — *Jun 2025 – Aug 2025*
  - Built a constrained optimizer for media-channel budget allocation using a Bayesian marketing mix model for Whole Foods and Amazon Fresh, projecting an 8% ROAS lift with uncertainty quantification.
  - Developed interactive visualization tools to make the optimization workflow interpretable for stakeholders.
- **Full-Time Research Professional, Center for Applied AI** — **The University of Chicago**
  Supervised by Sendhil Mullainathan — *Aug 2020 – Jul 2022*
  - Developed PyTorch pipelines for medical imaging, including CNNs, MAML, multi-GPU training, and StyleGAN2.
  - Built Bayesian inference workflows in PyMC3/HMC for educational testing; analyzed large-scale item-response, DICOM X-ray, and conviction datasets.
- **Summer Research Assistant in Astrostatistics** — **California Institute of Technology**
  Supervised by George Djorgovski and Eilat Glikman — *Summers 2017 – 2019*
  - Implemented spectral continuum normalization methods and quasar variability analysis pipelines in Python.
  - Developed two-sample testing workflows; received the Caltech VURP award in 2017.

Professional Service and Teaching

- **Journal Reviewer**: *Bayesian Analysis*, *Operations Research*, *Psychometrika*, *Statistics and Computing*.
- **Conference Reviewer**: NeurIPS.
- **Teaching Assistant**: Business Statistics (BUSN41000, Chicago Booth), Linear Algebra (MATH0200, Middlebury), Macro Theory (ECON0250, Middlebury).

Presentations

- Invited talk, ICSA Conference (Jun 2026, Arlington, VA)
- Invited talk, Department of Public Health Sciences at UChicago (Oct 2025, Chicago, IL)
- Invited talk, Chicago Booth Healthcare Initiatives (Nov 2024, Chicago, IL)
- Contributed poster, ISBA Conference (Jul 2024, Venice, Italy)
- Contributed talk, J-ISBA Conference (Jun 2024, Venice, Italy)

Selected Coursework

- **Statistics/ML**: Bayesian Deep Learning, Fundamentals of Deep Learning, High-Dimensional Hypothesis Testing, Linear Models, Mathematical Statistics.
- **Economics**: Bayesian Econometrics, Causal Machine Learning, Empirical Analysis, Price Theory, Theory of Income.
- **Mathematics**: Advanced Probability, Measure Theory, Optimization Techniques, Spectral Graph Theory.
- **MBA**: Financial Accounting, Marketing Data Science, Managing in Organizations, Investments, Operations Management.