Jiguang Li

•jiguang@chicagobooth.edu • (312) 366-6667 • Website: https://jiguangli.github.io/
•5807 S Woodlawn Ave • Chicago, IL 60637

Education

- **The University of Chicago Booth School of Business** **Chicago, IL** *Sep 2022 -*
  - Ph.D. student in Econometrics and Statistics; supervised by *Veronika Ročková*
  - Research Interests: Bayesian statistics, computational social science, machine learning.
- **Yale University** **New Haven, CT** *Aug 2019 - May 2020*
  - Master of Arts in Statistics, GPA: 3.88/4.00
- **Middlebury College** **Middlebury, VT** *Sep 2015 - May 2019*
  - Bachelor of Arts in Mathematics, Bachelor of Arts in Computer Science
  - Summa Cum Laude (GPA: 3.83/4.00) ; Highest Honor in Mathematics

Publications

- **Li, J.**, Gibbons, R. and Rockova V, 2023. Sparse Bayesian Multidimensional Item Response Theory (submitted).

Core Skills

Languages: Chinese (native), English (fluent), Spanish (college-level intermediate), Italian (IB ab initio)
Tutoring: Teaching assistant for Calculus, Economics History, and Linear Algebra at Middlebury College
Programming Languages: Python (Pytorch), R, Java, LaTeX, basic Javascript, HTML, and C

Experiences

- **Full-time Research Professional at the Center for Applied AI** **The University of Chicago**
  Supervised by Sendhil Mullainathan *Aug 2020 - July 2022*
  - Implemented deep learning models (Pytorch) for medical Imaging research: Convolutional Neural-networks, Model-Agnostic Meta-Learning, Parallel GPU computation, and StyleGAN2.
  - Built Bayesian inference codebase with Hamiltonian Monte Carlo Markov Chain (Pymc3) for educational testing and evaluations.
  - Data analysis experiences: education item response data, DICOM X-ray Images, conviction history.
- **Research on Online Volunteers Market Matching** **Yale University**
  Supervised by Vahideh Manshadi *May 2020 - Aug 2020*
  - Optimized matching strategies to maximize the probability of matching volunteers to nonprofits.
  - Built analysis pipeline to analyze 100,000+ anonymized volunteers' activities to help nonprofits better understand volunteers behaviors.
- **Summer Research Assistant on Astrostatistics** **Yale University**
  Summer Research Assistant *Summer 2019*
  - Implemented two state of art astrostatistics methodologies for continuum normalization in Python.
  - Wrote demo website for astronomy continuum lab source smoothing.
- **Summer Research Assistant on Astrostatistics** **California Institute of Technology**
  Supervised by George Djorgovski and Eilat Glikman *Summer 2017*
  - Implemented data analysis pipeline to analyze different types of variability indices for radio-quiet and radio-loud quasars.
  - Conducted two-sample statistical hypothesis testings.
  - Recipient of 2017 Caltech Visiting Undergraduate Research Award (VURP)

Open-Source Contributions

- **Bayesian Item Response Theory**: This repo contains the R implementation of the Expectation-Maximization (EM) algorithm, and the Python implementation of the Gibbs Sampler, to estimate sparse factor loadings from item response data.
- **Spectroscopic analysis**: Python Implementation of the Alpha-shape Fitting algirithm to flatten the spectrum continuum, an important data analysis step in spectroscopic analysis.

Selected PhD-level Coursework

- **Economics**: Bayesian Econometrics, Causal Machine Learning, Empirical Analysis, Price Theory 2, Theory of Income 1.
- **Mathematics**: Advanced Probability, Measure Theory, Optimization Techniques, Spectral Graph Theory.
- **Statistics/ML**: Bayesian Deep Learning, Fundamentals of Deep Learning, High-dimensional Hypothesis Testing, Linear Models, Mathematical Statistics 2.