JIEYU GAO

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Education

University of California, Irvine **Sep. 2018 – March 2024**
Ph.D. Candidate in Econometrics and Quantitative Economics *Irvine, CA*

University of California, Irvine **Sep. 2018 – Dec. 2019**
M.A. in Econometrics and Quantitative Economics *Irvine, CA*

Purdue University **Aug. 2012 – May 2016**
B.S. in Economics and Applied Statistics ((Dual Degree)) *West Lafayette, IN*

Research Interest

Bayesian Econometrics, Causal Inference, Discrete Choice, Machine Learning, Nonparametric Statistics

Working Papers

On the Importance of Heteroskedasticity in Causal Inference *With Ivan Jeliazkov*

- Examined the impacts of heteroskedasticity on some causal inference models, including sharp and fuzzy regression discontinuity designs, propensity score matching, and potential outcome framework.

Bayesian Analysis of a Self-selection Model with Multiple Outcomes

- Proposed a parametric self-selection Bayesian model with one binary treatment and two outcome variables. Applied the model to two datasets to study the impact of private insurance on healthcare expenditures and the number of Physician office visits.

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Product pricing with consumer learning

- Proposed a game theory model to study the impact of seller's reputation on their pricing strategy, and solved the undefeated equilibrium. A separate equilibrium exists when the initial reputation level is low.

Work in Progress

Bayesian Analysis of Drug and Mental Health Treatment Effects

- Propose a structural multivariate Bayesian treatment model with two binary treatments, mental health treatment and drug or alcohol treatment. This analysis will be conducted using the 2018-2019 National Survey on Drug Use and Health (NSDUH).

Work Experience

Amazon **June 2023 – Sep. 2023**
Economist Intern *Bellevue, WA*

- Used instrumental variables, A/B testing, double/debiased machine learning, and fuzzy regression discontinuity design to estimate the average treatment effect and heterogeneous treatment effect of a particular product on financial metrics and customer engagements.
- Provided detailed business and technical documents as references for business decisions.
- Skills: Python, R, SQL, AWS Redshift, AWS SageMaker, Causal Inference, Machine Learning.

University of California, Irvine **Sept. 2019 – Present**
Teaching Assistant *Irvine, CA*

Purdue University, ITaP **June 2016 – May 2018**
Emerging IT Leaders *West Lafayette, IN*

- High-performance computing (HPC) support: Communicated with researchers about their research computing concerns and provided solutions.
- Analyzed the HPC usage data and provided useful data visualizations using Python and Juptyter Notebook.
- Used SQL to generate data tables based on researchers' requests.
- Skills: SQL, Python, Jupyter Notebook, Data Visualization.

Conferences and Presentations

Econometrics Seminar, UC Irvine, 2023

Macroeconomics Brownbag Seminar, UC Irvine, 2023

Economics Annual Poster Session, UC Irvine, 2020-2023

Fellowships

Associate Dean's Fellowship, Spring 2023
Graduate Student Researcher Fellowship (GSR), 2018 - 2019

Teaching Experience

MGMT 7: Statistics for Business Decision Making — Fall 2023

ECON 122A: Applied Econometrics I — Winter 2021, Summer I and II 2022, Fall 2022, Winter 2023

ECON 13: Global Economy — Fall 2019, Spring 2022

ECON 123B: Econometrics II — Winter 2022

ECON 167: International Trade and Commercial Policy — Summer II 2021

ECON 122B: Applied Econometrics II — Fall 2020, Fall 2021

ECON 100C: Intermediate Economics III — Spring 2021

ECON 122A: Applied Econometrics I — Winter 2021

ECON 122B: Applied Econometrics II — Fall 2020

ECON 20A: Basic Economics I — Summer II 2020

ECON 15A: Probability and Statistics ECON I — Summer I 2020

ECON 142CW: Industrial Organization III — Spring 2020

ECON 142A: Industrial Organization I — Winter 2020

Techical Skills

Programming: Python, Java, SQL, R, Matlab, Stata, Gauss, Jupyter Notebook

Skills: Discrete Choice, Bayesian Statistics, Econometrics, Causal Inference, A/B testing, Machine Learning, MCMC Sampling, Deep Learning, Time-series Forecasting, Nonparametric Statistics

Tools: PyTorch, PySpark, Git, VS Code, HTML/CSS, AWS Redshift, AWS SageMaker, Markdown, TeX