

JIEYU GAO

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Education

University of California, Irvine

Ph.D. Candidate in Econometrics and Quantitative Economics

Sep. 2018 – March 2024

Irvine, CA

University of California, Irvine

M.A. in Econometrics and Quantitative Economics

Sep. 2018 – Dec. 2019

Irvine, CA

Purdue University

B.S. in Economics and Applied Statistics ((Dual Degree))

Aug. 2012 – May 2016

West Lafayette, IN

Technical 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

Work Experience

Amazon

Economist Intern

June 2023 – Sep. 2023

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, Data Visualization.

Purdue University, ITaP

Emerging IT Leaders

June 2016 – May 2018

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 Jupyter Notebook.
- Used SQL to generate data tables based on researchers' requests.
- Skills: SQL, Python, Jupyter Notebook, Data Visualization.

Projects

On the Importance of Heteroskedasticity in Causal Inference | *Gauss, Python, Stata*

March 2022 - Aug. 2023

- Examined the impacts of heteroskedasticity on some causal inference models, including sharp and fuzzy regression discontinuity designs, propensity score matching, and potential outcome framework.
- Skills: MCMC, Metropolis-Hasting, Nonparametric Statistics, Bayesian Statistics, Causal Inference, Simulation.

Bayesian Analysis of Drug and Mental Health Treatment Effects | *Matlab*

May 2023 - Present

- 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).
- Skills: Causal Inference, MCMC, Metropolis-Hasting, Bayesian Statistics.

Bayesian Analysis of a Self-selection Model with Multiple Outcomes | *Matlab*

Feb. 2021 - Feb. 2022

- 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.
- Skills: Causal Inference, MCMC, Metropolis-Hasting, Bayesian Statistics.

Big Data Course Project: Electricity Smart Metering | *Python*

Winter 2021

- Used the dataset that contains the data collected in the electricity smart metering technology trials conducted in Ireland to predict the electricity consumption from residential households. Compared the results in three methods: decision tree, lasso regression, and neural network.

Additional Experience

Amazon Econ Summit Reviewer, 2023

Machine Learning Certification, Coursera, 2017