JIEYU GAO

3151 Social Science Plaza A, Irvine, CA 92697-5100
765-637-6805 jieyug1@uci.edu linkedin.com/in/jieyu-gao gaojieyu.com/

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*

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

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, Data Visualization.

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.

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