

LUJIE (ROGER) ZHOU

Contact Information

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Education

Ph.D. Economics, Pennsylvania State University Expected 2026

Advisors: Andres Aradillas-Lopez (aza12@psu.edu), Keisuke Hirano (kuh237@psu.edu), Marc Henry (marc.henry@psu.edu), Yubai Yuan (yvy5509@psu.edu)

M.S. Statistics; Agricultural and Resource Economics, University of California, Davis 2020

B.S. Statistics; Managerial Economics, University of California, Davis 2018

Research Interests

Applied microeconomics, causal inference, econometrics, machine learning, social network analysis.

Job Market Paper

Heterogeneous Treatment Effects under Complex Network Interference. [code]

Abstract: This paper develops a semi-parametric model for heterogeneous treatment effect in the presence of peer influence over a network. We propose a novel framework that non-parametrically models individual-level treatment responses via functions in a reproducing kernel Hilbert space (RKHS) to flexibly capture non-linearity induced by covariates while accommodating structural peer effects, both endogenous and contextual. We address the reflection problem using an instrumental variables (IV) strategy that leverage higher order neighbors across the network graph. An iterative algorithm estimates the linear parameters and the function jointly. The paper derives conditions for identification and asymptotic properties of the estimators. Monte Carlo simulations highlight the method's easy implementability and performance even when the dimension of covariates is large relative to the sample size. We revisit a real social network experiment, applying our procedure to recover the non-linearity in treatment effect and obtain sizable gains in important counterfactual policies.

Working Paper

ZHOU, L. (2023): "Efficient Computation of Confidence Sets Using Classification on Equidistributed Grids," arXiv: 2401.01804. [code]

Work in Progress

COLINA, A. R. AND L. ZHOU (2024): "The Impact of Short-Term Rental on Local Housing Markets: Evidence from Mexico," Banco de México working papers.

YUAN, Y. AND L. ZHOU (2023): "Online Causal Learning and Treatment Assignment in Networks," working paper.

Referee Service

Econometric Reviews

Skills

Programming: R, Python, SQL, Matlab, Julia, Stata.

Languages: English, Mandarin Chinese.

Software: Microsoft Office, L^AT_EX.

Certificates: CIRTL Teaching Certificate, Essentials of Online Teaching, Johns Hopkins Teaching Institute, Teaching with AI, Udemy SQL Bootcamp.

Professional Experience

Summer Researcher, the General Directorate of Financial System Issues, Banco de México

Graduate Student Researcher, UC Davis 2018 - 2020

Undergraduate Researcher, Research Training Group, UC Davis 2018

Teaching

- ECON 106. Statistical Foundations for Econometrics, Penn State
- ECON 306. Introduction to Econometrics, Penn State

Presentations

General Directorate of Financial System Issues, Banco de México June 2024

The Institute for Computational and Data Sciences (ICDS) Symposium (Poster Session) October 2025

New York State Economics Association (NYSEA) Conference November 2025

NABE Tech Economics Conference (Lightning Talk & Poster Session) November 2025

The Econometric Society European Winter Meeting (EWMES 2025) December 2025

The Econometric Society Asia Meeting (AMES 2026) January 2026

Awards & Honors

Ed Green Graduate Fund, Department of Economics, Penn State 2025

Optimization-Conscious Econometrics Summer Scholarship, UChicago 2024

Dean's Circle Award, UC Davis 2018