

Yuan Tuo

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Education

2020–26	Ph.D., Economics, University of California, Davis (expected)
2018–19	B.Ec., Economics (First Class Honours), The University of Sydney
2017	Exchange, University of Wisconsin–Madison
2015–18	B.Ec., Economics, The Australian National University
2014–15	Wuhan University, China

Research Interest

Econometrics, Applied Econometrics

Working Papers

Optimal Treatment Under Spillover Effects and Noncompliance (Job Market Paper)

Abstract: This paper considers optimal treatment allocation in the presence of spillover effects in both take-up decisions and outcomes. When there are two layers of spillover effects, I allow an individual's outcome to depend on other individuals' compliance types in the neighborhood. I construct estimators of the welfare function and the budget constraint, then based on the characteristics of the target population, I propose treatment allocations that maximize the estimated welfare subject to the estimated budget constraint, or minimize the estimated cost subject to a welfare target. I show that the proposed allocations achieve asymptotic welfare efficiency and weak feasibility. In an anti-conflict experiment in public middle schools in New Jersey, I estimate the minimum allocation required to achieve various targets for the average expected outcome. The results show that failing to account for both layers of spillover effects can lead to a suboptimal level of treatment allocation.

Causal Inference in RCTs with Multiple Treatment Arms

Abstract: When there is more than one treatment group in a randomized controlled trial (RCT) with noncompliance, local average treatment effects (LATEs) are not comparable because each treatment has different compliers. I propose a partial-identification approach to compare two treatments in the presence of noncompliance. In particular, under extra dependence assumptions on the copula of unobservables, I derive pairwise sharp bounds on the average difference between the treatment effects for those who would comply with both treatments, as well as for other subpopulations. In an experiment evaluating the impacts of different depression treatments on economic outcomes in India, I provide bounds on the average difference between two depression treatments for always compliers.

Work in Progress

Inference of Marginal Treatment Effect (MTE) Estimator (with Takuya Ura)
Identification of Causal Effects in Network Experiments Using IVs

References

Takuya Ura

UC Davis
Associate professor
takura@ucdavis.edu

Shu Shen

UC Davis
Associate professor
shushen@ucdavis.edu

Colin Cameron

UC Davis
Professor
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Presentations

2025 California Econometrics Conference
2025 Midwest Econometrics Group Conference

Fellowships and Awards

2023 Dean's Graduate Summer Support Award, University of California, Davis
2021 First-year Fellowship, University of California, Davis

Teaching Experience

2020–25 **Teaching Assistant, University of California, Davis**
Undergraduate
Analysis of Economic Data, Econometrics, Economic & Financial Forecasting,
Economics & Business Data Analytics, Principles of Microeconomics,
Principles of Macroeconomics, Intermediate Macro Theory, Public Finance
Graduate (Ph.D. level)
Econometric Methods, Cross-Sectional Econometrics

2019 **Tutor, The University of Sydney**
Introductory Microeconomics, Introductory Macroeconomics

Referee Service

Econometrics Review

Software Skills

R, Stata, Matlab

Languages

Mandarin (native), English (fluent), Japanese (JLPT N1)