Muyang Ren (任慕洋)

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Education

Duke University, Durham, USA

Ph.D., Economics   2019 – 2025 (expected)

Wuhan University, Wuhan, China

B.S., Applied Mathematics   2015 – 2019
B.A., Economics   2015 – 2019

Research Fields

Primary: Econometrics (Weak Identification, Partial Identification, Randomization Inference)

Secondary: Applied Microeconomics

Working Papers

Extrapolating LATE with Weak IVs
(Job Market Paper)

> To evaluate the effectiveness of a counterfactual policy, it is often necessary to extrapolate treatment effects on compliers to broader populations. This extrapolation relies on exogenous variation in instruments, which is often weak in practice. This limited variation leads to invalid confidence intervals that are typically too short and cannot be accurately detected by classical methods. For instance, the F-test may falsely conclude that the instruments are strong. Consequently, I develop inference results that are valid even with limited variation in the instruments. These results lead to asymptotically valid confidence sets for various linear functionals of marginal treatment effects, including LATE, ATE, ATT, and policy-relevant treatment effects, regardless of identification strength. This is the first paper to provide weak instrument robust inference results for this class of parameters. Finally, I illustrate my results using data from Agan, Doleac, and Harvey (2023) to analyze counterfactual policies of changing prosecutors' leniency and their effects on reducing recidivism.

Marginal Homogeneity Tests with Panel Data (with Federico Bugni and Jackson Bunting)

A General Approach to Relaxing Unconfoundedness (with Matthew Masten and Alexandre Poirier)

Work in Progress

Inference on Weakly Identified Intersection Bounds

Estimating Dynamic Discrete Choice Games under the Steady State Assumption (with Federico Bugni and Jackson Bunting)

Coursework

Econ 703 Econometrics I: Probability and Statistics, Estimation and Inference in Linear Regressions and GMM models.

Econ 707 Econometrics II: Causal Inference and Identification Analysis in Linear Potential Outcome Models, IV Models, Panel Data, Discrete Choice Models, and Selection Models. Time-series analysis in ARMA models, Vector Autoregressive Models, and Linear Regressions with time-series.

Econ 883 Econometrics III: Nonparametric and Semi-parametric Estimation, Causal Inference Methods (Regression Discontinuity Design, Randomized Experiments, Marginal Treatment Effects, Matching and Synthetic Control Methods, and Distribution of Treatment Effects), Design-based Estimation.

Econ 881 Dynamic Discrete Choice (DDC): Rust Models and Full Solution Methods, Conditional Choice Probability Estimation, Finite Dependence in DDC Models, DDC in Continuous Time, and DDC with Unobserved Heterogeneity.

Econ 826 Partial Identification in Industrial Organization: Partial Identification in Imcomplete Auction Models, Static Entry Models, Discrete Choice Models, and Dynamic Discrete Choice Models.

Research Experience

08/2022-present	Reserch Assistant to Matt Masten
09/2021-05/2022	Reserch Assistant to Adam Rosen
05/2021-08/2021	Reserch Assistant to Federico Bugni

Teaching Experience

2022 Spring	Grader to Allan Collard-Wexler and Adam Rosen, Partial Identification in IO (Ph.D. elective)
2021 Fall	Grader to Adam Rosen, Econometrics III (Ph.D. elective)
2020 Fall	Teaching Assistant to Adam Rosen and Andrew Patton, Econometrics II (Ph.D. core)
2021 Spring	Teaching Assistant to Matt Masten, Econometrics I (Ph.D. core)

Awards and Fellowships

2024	Duke Conference Travel Award
2023 Summer	Duke Domestic Dissertation Travel Award
2020-2024 Summer	Duke Graduate School Summer Research Fellowship
2019-2020	Duke Graduate School Fellowship
2018	National Scholarship

Conference

2024	Triangle Econometrics Conference (NC State University), SEA Annual Meeting

Other Information

Programming: MATLAB, Stata, R, LaTeX

Languages: English (fluent), Mandarin (native)

References

Matt Masten

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Duke University

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Adam Rosen

Professor of Economics

Duke University

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Federico Bugni

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Northwestern University

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Arnaud Maurel

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