# Muyang Ren

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# Education

- Ph.D. Economics, Duke University, 2025 (expected).
  - Committee: Matthew A. Masten (chair), Federico A. Bugni, Adam M. Rosen, Arnaud Maurel
- B.S. Applied Mathematics, Wuhan University, 2019.
- B.A. Economics, Wuhan University, 2019.

#### **Research Interests**

Econometrics: weak identification, partial identification, and randomization inference

### Research

#### Job Market Paper

#### Extrapolating LATE with Weak IVs, 2024.

*Abstract:* 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.

#### Working Papers

Marginal Homogeneity Tests with Panel Data (with Federico Bugni and Jackson Bunting), 2024.

A General Approach to Relaxing Unconfoundedness (with Matthew Masten and Alexandre Poirier), 2024.

## Presentations

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

#### **Reserch 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
2021 Fall: Grader to Adam Rosen, Econometrics III (2nd year PhD elective)
2021 Spring: Teaching Assistant to Adam Rosen and Andrew Patton, Econometrics II (Ph.D. core)
2020 Fall: Teaching Assistant to Matt Masten, Econometrics I (Ph.D. core)

#### Awards

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

## Languages

English (fluent), Mandarin (native)

#### References

Matt Masten Associate Professor of Economics Duke University ⊠ matt.masten@duke.edu

Federico Bugni Professor of Economics Northwestern University ⊠ federico.bugni@northwestern.edu

#### Adam Rosen

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Arnaud Maurel Associate Professor of Economics Duke University ⊠ arnaud.maurel@duke.edu