MIT Economics

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DOCTORAL STUDIES

Massachusetts Institute of Technology (MIT)
PhD, Economics and Statistics, Expected completion June 2027
DISSERTATION: "Essays in Econometrics"

DISSERTATION COMMITTEE AND REFERENCES

Professor Isaiah Andrews
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Professor Alberto Abadie
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PRIOR EDUCATION

Yale University — 2021
BA, Economics and Mathematics, *magna cum laude*

CITIZENSHIP USA **GENDER:** Male

FIELDS Econometrics, Applied Econometrics, Statistics

TEACHING EXPERIENCE

New Econometric Methods (14.386), MIT — Spring 2027
TA to Professors Alberto Abadie and Ashesh Rambachan

Nonlinear Econometric Analysis (14.385), MIT — Fall 2026
TA to Professors Alberto Abadie and Isaiah Andrews

Nonlinear Econometric Analysis (14.385), MIT — Fall 2025
TA to Professors Alberto Abadie and Isaiah Andrews

Introduction to Statistical Methods in Economics (14.30), MIT — Fall 2025

	TA to Professor Alberto Abadie	
RELEVANT POSITIONS	RA to Professor Anna Mikusheva, MIT	2021–22
	RA to Professor James Choi, Yale	2019
	RA to Professor Ebonya Washington, Yale	2019
FELLOWSHIPS, HONORS, AND AWARDS	Jerry A. Hausman Dissertation Fellowship, MIT	2024
	George and Obie Shultz Fund Grant, MIT	2023
	Robert M. Solow Fellowship, MIT	2022
	National Science Foundation Graduate Research Fellowship	2021
	MIT Economics Departmental Fellowship	2021
	Phi Beta Kappa, Yale	2021
	Valedictorian, AEA Summer Training and Scholarship Program	2020
	Connecticut Governor's Scholar	2016

PROFESSIONAL ACTIVITIES

Refereeing: American Economic Review

Service: Contributor to MIT Econometrics Clinic (2024), Organizer for MIT Econometrics Lunch (2024–25) and MIT Third-Year Lunch (2023–24), Mentor for Economics Mentoring Program (2022–2025)

RESEARCH PAPERS

Robust Inference for Weighted Estimands (Job Market Paper).

Researchers often conduct inference on weighted estimands, defined as weighted averages of group-level effects. Example settings include event studies with cohort-level effects and experiments with site-level effects. Under heterogeneous effects, different weighting schemes yield estimands with distinct empirical and policy interpretations, leading to ambiguity and disagreement over the choice of weights. I establish bounds on differences between weighted estimands and confidence bounds on effect heterogeneity, which I use to construct estimators that minimize worst-case bias and confidence intervals that are uniformly valid over classes of weighted estimands. I apply these methods to an event study in Lakdawala, Nakasone, and Kho (2023), which studies the effects of school-based internet access on test scores. I find that results are robust to broad classes of weights. I then apply the methods to Tennessee's Project STAR experiment and find that results are sensitive to small departures from baseline weights.

Interpreting TSLS Estimators in Information Provision Experiments (with Whitney Zhang), *American Economic Review: Insights* (2025).

In information provision experiments, researchers often estimate the causal effects of beliefs on actions using two-stage least squares (TSLS). This paper formalizes exclusion and monotonicity conditions that ensure that TSLS recovers a positive-weighted average of causal effects. We assess common TSLS estimators for both passive and active control designs from the literature; we find that two commonly used passive control estimators generally allow for

negative weights. The choice of passive control estimator affects the magnitude and significance of estimates in simulations and in an empirical application. We give practical recommendations for addressing these issues.

Headline Estimation with Multiple Research Designs.

To study a scalar parameter, a researcher may consider multiple research designs. Based on the evidence across designs, the researcher may wish to formulate a headline estimate of the parameter. I examine how to choose this headline when it is unclear which design is most appropriate for studying the parameter. I model this setting by assuming that (i) exactly one of the designs is valid for the parameter and (ii) the researcher has ambiguity about which design is valid, represented by a class of priors over the candidate designs. To account for ambiguity, I propose reporting the headline estimate that minimizes the worst-case posterior risk over the class of priors. In three applications, I show cases where accounting for ambiguity materially affects the quantitative conclusion and cases where an existing headline is already close to optimal.

"Post" Pre-Analysis Plans: Valid Inference for Non-Preregistered Specifications (with Reca Sarfati).

Pre-analysis plans are now standard in experimental economics, but researchers often supplement preregistered analyses with non-prespecified results after observing the data. We study inference in this setting when the decision to report additional results depends on realized findings. We show that conventional confidence intervals and point estimates can be invalid even absent manipulation, because non-preregistered results are observed only in selected data realizations. We derive conditional inference procedures that account for selective reporting, characterize when the implied corrections are large or negligible, and apply the approach to Bessone et al. (2021). We conclude with guidance for empirical researchers and journals.

Integrating Diagnostic Checks into Estimation (with Reca Sarfati).

Empirical researchers often use diagnostic checks to assess the plausibility of their modeling assumptions, such as testing for covariate balance in RCTs, pre-trends in event studies, or instrument validity in IV designs. While these checks are traditionally treated as external hurdles to estimation, we argue they should be integrated into the estimation process itself. In particular, we propose residualizing one's baseline estimator against the vector of diagnostic check statistics to remove the component of baseline sampling variation explained by the diagnostic checks. This residualized estimator offers researchers a "free lunch," delivering three properties simultaneously: (i) eliminating inference distortions from check-based selective reporting; (ii) reducing variance without changing the estimand when the baseline model is correctly specified; and (iii) minimizing worst-case bias under bounded local misspecification within the class of linear adjustments. We apply our method to the RCT in Kaur et al. (2024) and find that, even in a setting where all

balance checks pass comfortably, residualization increases the magnitude of the baseline point estimate and reduces its standard error, equivalent to approximately a 10% increase in sample size.

RESEARCH IN PROGRESS

Federated Learning and Privacy Protection (with Dirk Bergemann, Alessandro Bonatti, and Mert Demirer).