JOSHUA SHEA
https://jkcshea.github.io/
kcshea@uchicago.edu

Office Contact Information   **Home Contact Information**
1126 E. 59th Street – Saieh Hall for Economics   5123 S Kimbark Ave Apt 408
Chicago, IL 60637   Chicago, IL 60615
                                                                            (773) 501-4141

Placement Directors: Professor Ufuk Akcigit, uakcigit@uchicago.edu, (773) 702-0433
    Professor Manasi Deshpande, mdeshpande@uchicago.edu, (773) 702-8260

Graduate Student Coordinator: Amy Schulz, aschulz@uchicago.edu, (773) 834-1972

Citizenship: New Zealand

Education
    University of Chicago, 2016 – Present
    Ph.D. Candidate in Economics
    Thesis Title: "*Detecting Racial Bias in Police Traffic Searches*"
    Expected Completion Date: June 2022

    University of Chicago, 2008 – 2012
    B.A. Economics

    References:
    Professor Alexander Torgovitsky (Primary   Professor Stéphane Bonhomme
    Advisor)
    University of Chicago   University of Chicago
    torgovitsky@uchicago.edu   stephane@uchicago.edu
    (773) 702-1569   (773) 702-8191

    Professor Peter Hull
    Brown University
    peter_hull@brown.edu

Research Fields:
    Primary fields: Applied Econometrics

    Secondary fields: Labor Economics

Teaching Experience:

Spring, 2019	Econometrics (undergraduate), University of Chicago, Lecturer (received graduate student teaching award)
Winter, 2019	Optimization Conscious Econometrics (second year Ph.D. course), University of Chicago, TA for Guillaume A. Pouliot
Fall, 2018	Applied Microeconometrics (second year Ph.D. course), University of Chicago, TA

for Alexander Torgovitsky

Spring, 2018   Econometrics III (first year Ph.D. course), University of Chicago, TA for Stéphane Bonhomme

Research Experience and Other Employment:
2017 – Present   University of Chicago, Research Assistant to Alexander Torgovitsky

2017 – 2021   University of Chicago, Research Assistant to Guillaume A. Pouliot

2014 – 2016   Center for the Economics of Human Development, University of Chicago, Research Professional

2012 – 2014   Compass Lexecon (formerly Princeton Economics Group), Research Associate

Honors, Scholarships, and Fellowships:
2016 – Present   Economics Department Ph.D. Fellowship

Computer Languages
R (skilled), Stata (proficient), LaTeX, GitHub.

Publications:

"Inference for Support Vector Regression with l1 Regularization" AEA Papers and Proceedings, 2021 (with Yuehao Bai, Hung Ho, Guillaume A. Pouliot)

Abstract: We provide large sample distribution theory for support vector regression (SVR) with l1-norm, along with error bars for the SVR regression coefficients. Although a classical Wald confidence interval obtains from our theory, its implementation inherently depends on the choice of a tuning parameter which scales the variance estimate and thus the width of the error bars. We address this shortcoming by further proposing an alternative large sample inference method based on the inversion of a novel test statistic which displays competitive power properties and does not depend on the choice of a tuning parameter.

Research Papers:

"*Detecting Racial Bias in Police Traffic Searches*" (Job Market Paper)

Abstract: I construct a flexible test for racial bias in police traffic searches that is robust to sample selection and may be performed on individual officers. I do this using bilinear programming to analyze the search decisions of officers separately from the distribution of drivers stopped. The test relies on an instrument that shifts the distributions of drivers stopped without shifting the officer's search preference. This is distinct from instruments based on random assignment of decision makers, which are invalid when there is sample selection. Using publicly available police data from the Metropolitan Nashville Police Department, I find 10 out of 50 of their officers to be biased in traffic searches.

"ivmte: An R Package for Implementing Marginal Treatment Effect Methods" (submitted; with Alexander Torgovitsky)

Abstract: Instrumental variable (IV) strategies are widely used to estimate causal effects in economics, political science, epidemiology, psychology, and other fields. When there is unobserved heterogeneity in causal effects, standard linear IV estimators only represent effects for complier subpopulations (Imbens and

Angrist, 1994). Marginal treatment effect (MTE) methods (Heckman and Vytlacil, 1999, 2005) allow researchers to use additional assumptions to extrapolate beyond complier subpopulations. We discuss a flexible framework for MTE methods based on linear regression and the generalized method of moments. We show how to implement the framework using the ivmte package for R.