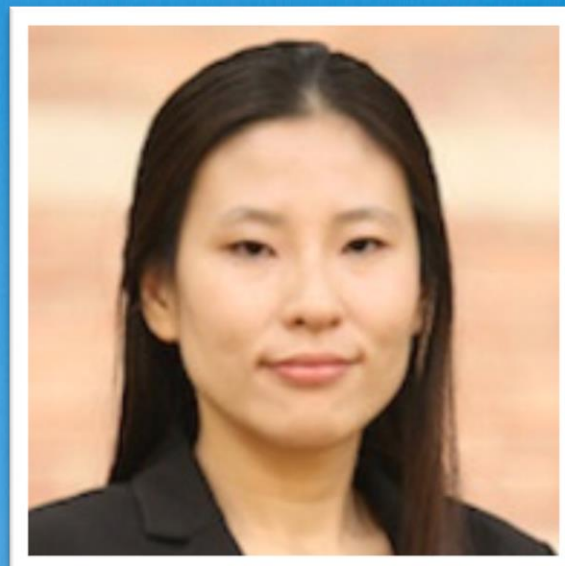


Ruoyao Shi, Ph.D.
Assistant Professor
University of
California, Riverside
Riverside, CA

Olmsted Hall 420
February 19th 2019
3:45-4:45pm
*Reception in Olmsted 1331
at 3:15 P.M.*



“AN AVERAGING ESTIMATOR FOR TWO STEP M ESTIMATION IN SEMIPARAMETRIC MODELS”

For More Information About This Seminar, Please Visit statistics.ucr.edu/colloquiua.html

Abstract

In this paper, we study the two step M estimation of a finite dimensional parameter which depends on a first step estimation of a potentially infinite dimensional nuisance parameter. We present an averaging estimator that combines a semiparametric estimator based on nonparametric first step and a parametric estimator which imposes parametric restrictions on the first step. The averaging weight is the sample analog of an infeasible optimal weight that minimizes quadratic risk functions. This averaging estimator strikes a balance between the robust semiparametric estimator and the efficient parametric estimator, as we show that the averaging estimator uniformly dominates the semiparametric estimator in terms of asymptotic quadratic risk regardless of whether the first step parametric restrictions hold or not. In particular, we prove that under certain sufficient conditions, the asymptotic lower bound of the truncated quadratic risk differences between the averaging estimator and the semiparametric estimator is strictly less than zero under a class of data generating processes that includes both correct specification and misspecification of the first step parametric restrictions, and the asymptotic upper bound is weakly less than zero.

Biography

The research areas of Dr. Shi include nonparametric identification and estimation of structural economic models, estimation of semiparametric models, and methodologies related to applied microeconomic areas such as labor economics. Before joining UCR Economics, she obtained her PhD in Economics from UCLA.