HYEONSEOK PARK

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EDUCATION

Ph.D., Economics, University of Washington, USA	2022 expected
M.A., Economics, University of Korea, Republic of Korea	2013 - 2016
B.A., Economics, University of Korea, Republic of Korea	2006 - 2013

RESEARCH AND TEACHING FIELDS

Econometric Theory, Time Series Econometrics, Optimal Transport, and Machine Learning.

REFERENCES

Professor Yanqin Fan (Chair)
Department of Economics
University of Washington
fany88@uw.edu

Professor Chang-Jin Kim
Department of Economics
University of Washington
changjin@uw.edu

Professor Jing Tao
Department of Economics
University of Washington
jingtao@uw.edu

Placement Director: Professor Quan Wen (wenq2@uw.edu)
Placement Assistant: Heidi Hannah (hmhannah@uw.edu)

JOB MARKET PAPER

"Minimum Sliced Distance Estimation in Structural Models," with Yanqin Fan

Abstract: This paper develops a simple and robust method for the estimation and inference in structural econometric models based on sliced distances. Three motivating models considered are asset pricing/state-space models, aggregate demand models, and models with parameter-dependent support. In contrast to MLE and likelihood-based inference, we show that under mild regularity conditions, our estimator is asymptotically normally distributed leading to simple inference regardless of the possible presence of "stochastic singularity" such as in the asset pricing/state-space models and parameter-dependent supports such as in the one-sided and two-sided models. Furthermore, our estimator is applicable to generative models with intractable likelihood functions but from which one can easily draw synthetic samples. We provide simulation results based on a stochastic singular state-space model, a term structure model, and an auction model.

WORKING PAPERS

"Estimation and Inference on Granger Causality in a Latent High-dimensional Gaussian Vector Autoregressive Model," with Yanqin Fan and Fang Han, Revision Invited at Journal of Econometrics

WORK IN PROGRESS

"Asymptotic Efficiency of Sliced Wasserstein ABC Estimator," with Yanqin Fan, and Yigit Okar

"Minimum Max-Sliced Distance Estimation in Structural Models"

"Sliced Wasserstein Approximate Bayesian Computation in State Space Models"

HONORS, AWARDS AND FELLOWSHIPS

Buechel Fellowship, University of Washington	2020
Graduate Teaching Awards, University of Washington	2019

RESEARCH EXPERIENCE

Research Assistant for Professor Yanqin Fan	SUM 2020, AUT 2020
Research Assistant for Professor Jing Tao	SUM 2019
Research Assistant for Professor Changjin Kim	SUM 2018, AUT 2018

TEACHING EXPERIENCE

Instructor, Econ 300 Intermediate Microeconomics	AUT 2021
Instructor, Econ 200 Introduction to Microeconomics	WIN 2021
Teaching Assistant, Econ 582 Econometrics III (PhD level)	SPR 2019, SPR 2020, SPR 2021
Teaching Assistant, Econ 581 Econometrics II (PhD level)	WIN 2019, WIN 2020
Teaching Assistant, Econ 500 Microeconomic Analysis I (PhD level)	AUT 2018
Teaching Assistant, Econ 200 Introduction to Microeconomics	SPR 2018, AUT 2019
Teaching Assistant, Econ 201 Introduction to Macroeconomics	WIN 2017, SPR 2017, AUT 2017, WIN 2018

PROFESSIONAL ACTIVITIES

Referee for: Journal of Econometrics

PERSONAL INFORMATION

Languages: English (fluent), Korean (native)

Computing: Matlab, R, Python, GAUSS

"Estimation and Inference on Granger Causality in a Latent High-dimensional Gaussian Vector Autoregressive Model," with Yanqin Fan and Fang Han, Revision Invited at Journal of Econometrics

Abstract: This paper develops estimation and inference methods for the transition matrices of a latent high-dimensional stationary Gaussian vector autoregressive process when the observed process is an increasing but otherwise unknown transformation of the latent process. Our estimator is based on rank estimators of the large variance and auto-covariance matrices of the latent process. We derive rates of convergence of our estimator based on which we develop inference for Granger causality. Numerical results demonstrate the efficacy of the proposed methods. Although our focus is on the latent process, by the nature of rank estimators, all the methods developed directly apply to the observable process which is a stationary semiparametric high-dimensional Gaussian copula process. In technical terms, our analysis relies heavily on newly developed exponential inequalities for (degenerate) U-statistics under α-mixing condition.