

XUETAO SHI

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EDUCATION

Ph.D., Economics, University of Washington, USA	2020 expected
M.A., Economics, University of Washington, USA	2014 - 2016
M.A., Economics, Vanderbilt University, USA	2012 - 2014
M.Eng., Electrical Engineering, Xi'an Jiaotong University, China	2010 - 2012
M.Sc., General Engineering, Ecole Centrale de Lyon, France	2008 - 2010
B.Eng., Electrical Engineering, Xi'an Jiaotong University, China	2006 - 2008

RESEARCH AND TEACHING FIELDS

Econometric Theory, Applied Econometrics, Industrial Organization, Machine Learning

REFERENCES

Professor Yanqin Fan (Chair)
Department of Economics
University of Washington
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Professor Aman Ullah
Department of Economics
University of California, Riverside
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Professor Jing Tao
Department of Economics
University of Washington
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Professor Fahad Khalil (Teaching)
Department of Economics
University of Washington
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Placement Assistant: Simon Reeves-Parker (simonrp@uw.edu, +1 (206) 685-1384)

JOB MARKET PAPER

“Testing When Parameters are Subject to Linear Inequality Constraints,” with Yanqin Fan

Abstract: This paper introduces the concept of an implicit nuisance parameter for testing the null hypothesis of linear equality constraints against the two-sided alternative hypothesis when the true parameter is subject to equality and inequality constraints in the maintained hypothesis. We propose an approach to identify the implicit nuisance parameter and provide a comprehensive study of asymptotically uniformly valid Wald, QLR, and score tests in an extremum estimation set-up. Among the two Wald tests, one QLR test, and three score tests developed in this paper, three tests fully exploit the information in the parameter space and the asymptotic distributions of their test statistics are discontinuous in the implicit nuisance parameter. The other three tests employ part of the information in the maintained hypothesis through projection and the asymptotic distributions of their test statistics are not discontinuous in any model parameter but depend on polytope projections. We present an algorithm based on Fourier-Motzkin Elimination to compute such projections. Numerical results from a Monte Carlo study of the finite sample performance of our tests and an empirical illustration are presented.

WORKING PAPERS

“Uniform Inference in a Generalized Interval Arithmetic Center and Range Linear Model,” with Yanqin Fan, Under review

“Sequential Estimation and Inference in Static Games of Incomplete Information with Nonseparable Unobserved Heterogeneity,” with Yanqin Fan and Shuo Jiang, Available upon request

WORK IN PROGRESS

“On Tests of Linear Inequality Constraints When the Parameter Space is Defined by Linear Inequalities.”

“Testing Linear Equality Constraints for Trending Data When Parameters are Subject to Linear Inequality Constraints.”

“One-Sided Testing Problem When Parameters are Subject to Linear Inequality Constraints.”

“Joint Hypothesis Testing Under the Maintained Hypothesis.”

“Identification and Inference in Moment Models of ‘Potential Outcomes’,” with Yanqin Fan, Shih-Tang Hwu and Jing Tao

“Doubly Robust Estimation and Inference via Moment Selection,” with Yanqin Fan and Shuo Jiang

HONORS, AWARDS AND FELLOWSHIPS

Langton Undergraduate Teaching Award, University of Washington	2019
Ensley Fellowship, University of Washington	2019
Center for Statistics and Social Sciences Travel Grant Award, University of Washington	2018
Buechel Scholarship, University of Washington	2018
Fisrt-Year Fellowship, University of Washington	2015
Most Outstanding Student, Vanderbilt University	2014
James S. and Rosemary Worley Award, Vanderbilt University	2013
Eiffel Excellence Scholarship, Ministry of Foreign Affairs, France	2010

CONFERENCE PRESENTATIONS

6th Seattle-Vancouver Econometrics Conference, UBC, Canada	2019
North American Summer Meeting of the Econometric Society, University of Washington	2019
9th Shanghai Econometrics Workshop, SUFE, China	2019
4th Seattle-Vancouver Econometrics Conference, University of Washington	2017

RESEARCH EXPERIENCE

Research Assistant for Professor Yanqin Fan, University of Washington	SUM 2019
Research Assistant for Professor Mario Crucini, Vanderbilt University	2013-2014

TEACHING EXPERIENCE

Instructor, Econ 482 Econometric Theory and Practice	SPR 2019
Instructor, Econ 382 Introduction to Econometrics	AUT 2018, WIN 2019
Instructor, Econ 200 Introduction to Microeconomics	SUM 2017, SUM 2018
Teaching Assistant, Econ 582 Econometrics III (PhD level)	SPR 2017
Teaching Assistant, Econ 382 Introduction to Econometrics	AUT 2017, WIN 2018
Teaching Assistant, Econ 200 Introduction to Microeconomics	AUT 2015, WIN 2016, SPR 2016

PROFESSIONAL ACTIVITIES

Referee for: Journal of Econometrics

Member of: American Economic Association, American Statistical Association, Econometric Society

PUBLICATIONS IN ENGINEERING

“An approach for economic assessment on oil-paper insulation diagnosis through accelerated aging experiments,” with Wen Cao and Baosheng He, *IEEE Transactions on Dielectrics and Electrical Insulation*, 24(4), 1842-1850, 2014

“Improvement on Condition Assessment Model for Oil-paper Insulation,” with Yuan La, *High Voltage Engineering*, 39, 1974-1980, 2013

“The investigation on dispersion of characteristic parameters for assessment of insulating state and economic feasibility in oil-paper insulation diagnosis,” with Wen Cao and Wei Shen, *2012 International Conference on Condition Monitoring and Diagnosis*, 913-916, 2012

PERSONAL INFORMATION

Languages: English (fluent), French (fluent), Chinese (native)

Computing: C/C++, Matlab, R, Stata, Eviews

ABSTRACTS OF WORKING PAPERS

“Uniform Inference in a Generalized Interval Arithmetic Center and Range Linear Model,” with Yanqin Fan

Abstract: Via generalized interval arithmetic, we propose a Generalized Interval Arithmetic Center and Range (GIA-CR) model for random intervals in which parameters in the model satisfy linear equality and inequality constraints. It extends the commonly used Center and Range (CR) model in several directions. For the GIA-CR model, we construct a constrained estimator of the parameter vector and propose a coefficient of determination; we develop asymptotically uniformly valid tests for linear equality constraints on the parameters in the model; and we conduct a simulation study to examine the finite sample performance of our estimator and test for the correct specification of the CR model against the Interval Arithmetic Center and Range (IA-CR) model in which the parameters in the range regression satisfy non-negativity constraints.

“Sequential Estimation and Inference in Static Games of Incomplete Information with General Unobserved Heterogeneity,” with Yanqin Fan and Shuo Jiang

Abstract: In this paper, we propose a novel method for sequentially estimating payoff vectors and conducting uniform inference in static games of incomplete information with general unobserved heterogeneity. Our method does not rely on either the assumption of rank independence or the assumption of additive separability adopted in the current literature. It relies on the novel reformulation of the problem of selecting the correct matching as a “moment” selection problem in a Minimum Distance estimation framework. We then estimate payoff vectors using the Minimum Distance approach based on the selected “moments”. We show consistency of the selected matching and consistency of estimator of the payoff vector. Moreover, we construct asymptotically uniformly valid tests for linear restrictions on the payoff vector. To facilitate computation, we introduce the sequential Monte Carlo method making our method feasible for large state spaces. Results from a simulation study on a random coefficients model confirm the efficacy of our estimation and inference methods in finite samples. We revisit Sweeting (2009)’s study of strategic timing decisions among radio stations to air commercials. We find evidence for the existence of unobserved heterogeneity. Using our methods, we obtain point estimates and confidence intervals for the parameters on each latent state.