SIHONG XIE

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EDUCATION

Ph.D. Economics	University of Colorado Boulder, 2019. GPA 3.79
MBA	Colorado State University, Fort Collins, 2011. GPA 3.87
MS Mechanical Engineering	Nanjing University of Aeronautics and Astronautics, Nanjing, China, 1991
BS Mechanical Engineering	Nanjing University of Aeronautics and Astronautics, Nanjing, China, 1988. Top 2%, Honors

FIELDS OF INTEREST

Primary: Econometrics
Secondary: International Trade

JOB MARKET PAPER

"Estimation of a Regression Jump: A Generalized Reflection Approach"

Abstract:
I propose a new class of estimators for regression discontinuity designs, a popular econometric model. In the past two decades, a great number of papers on RD applications and methodology have been published in leading economic journals. However, research on RD estimators, which is fundamental to RD models, has been few and far between. The main estimation approach is to apply local linear (LL) or local polynomial estimators on both sides of the known discontinuity point and then to estimate the jump. My dissertation adopts a novel approach by providing a completely new class of RD estimators that take a generalized reflection approach. The insight is transforming a mathematical result – the extension of Hestenes (1941) – into the construction of RD estimators. My estimators have simple analytical representations, desirable asymptotic properties, and are computationally easy to implement. Having boundary properties that are as good as LL estimators and performing better than LL estimators in finite samples, my estimators offer a competitive alternative for LL estimators in RD models. Focusing on properties at boundary points, I provide results on the bias, variance and asymptotic distribution of my estimators. I compare my estimators with popular regression estimators, the Nadaraya-Watson (NW) and LL estimators, using both theoretical properties and finite sample performance. To illustrate the empirical applicability of my estimators, I apply them to an existing empirical RD

study and conduct empirically motivated simulations, which shows that my estimators reduce the mean square error (MSE) of LL estimators by almost half. Considering the popularity of RDD in empirical studies, I provide a full set of nonparametric RDD estimation packages in Matlab which includes LL and Hestenes based estimators for both regression and density estimation.

ADDITIONAL PAPERS

"Estimation of a Regression Jump with Additional Covariates in a Nonparametric Additive Model"

Abstract

I provide my general reflection estimator for multiple regression models with a discontinuity. To avoid "curse of dimensionality", I consider an additive model and propose four two-stage estimators. At the first stage, I use a marginal integration, instrument variable, backfitting, or B-splines estimator for the continuous components of the regression; at the second stage, I use the Hestenes estimator for the simple regression to estimate the jump discontinuity. Monte Carlo studies show my estimators reduce the MSE by almost half of the local linear RD estimators in an additive linear model that is commonly used in empirical research.

CONFERENCES and PRESENTATIONS

"Estimation of A Regression Jump: A Generalized Reflection Approach."

- 2018 The Australia New Zealand Econometric Study Group Meeting, Brisbane, Australia
- 2018 4th Conference of the International Society for Nonparametric Statistics, Salerno, Italy
- 2018 China Meeting of the Econometric Society, Shanghai, China
- 2018 Asian Meeting of the Econometric Society, Seoul, Korea
- 2018 The 2018 Research and Innovation Week Poster Sessions, University of Colorado Boulder

TEACHING EXPERIENCE

Lecturer at Albers School of Business and Economics, Seattle University, Seattle

Statistic Applications and Quantitative methods for graduate students	Fall Quarter 2019
Quantitative methods and Applications	Scheduled for Winter Quarter 2020
Business & Economic Forecasting (online and in-class)	Scheduled for Spring Quarter 2020

Lecturer at Department of Economics, University of Colorado Denver

Economic Forecasting	Spring 2019
Limits and Derivatives (Math review course for incoming graduate students)	Summer 2018, Summer 2019

Instructor at Department of Economics, University of Colorado Boulder

Math Tools for Economists II	Spring 2018, Spring 2017, Fall 2016, Spring 2016
Math Tools for Economists I	Fall 2015, Spring 2015
Intermediate Microeconomics Theory	Fall 2014

Teaching Assistant at Department of Economics, University of Colorado Boulder

Introduction to Statistics with Computer Applications (Online Course)	Summer 2018
Intermediate Microeconomics Theory	Fall 2017, Spring 2019
Principles of Microeconomics	Fall 2013, Spring 2013, Fall 2012
Principles of Macroeconomics	Fall 2017, Spring 2014

AWARDS and HONORS

2018 The Young/Emerging Scholar Award for the best paper presented at the 2018 Australia New Zealand Econometric Study Group Meeting,
2009 University Graduate Fellowship Award from Colorado State University
1988 The Outstanding Dissertation Award
1986 First-Class Merit-based Scholarship
1985 First-Class Merit-based Scholarship

GRANTS

2018 Salerno Mini Travel Grants, 4th Conference of the International Society for Nonparametric Statistics

PROFESSIONAL SERVICE

2018 Discussant at the Australia New Zealand Econometric Study Group Meeting
2018 Reviewer for The Singapore Economic Review
2019 Committee Member of MSBA Assessment Committee at Seattle University
2019 Taskforce to Investigate Certificate Business Economist at Seattle University

PROFESSIONAL AFFILIATIONS

The Econometric Society, American Economics Association, Beta Gamma Sigma Honor Society

EMPLOYMENT

2019−Present Lecturer at Albers School of Business and Economics, Seattle University, Seattle, WA.
Teach Statistic Applications and Quantitative methods to students of Master of Science in Business Analytics.

2002−2010 Programmer Analyst III, Kroll Factual Data, Loveland, CO
Developed online data exchange solutions that connect company's small clients – hundreds of thousands of origination loan officers – as well as big clients such as Fannie Mae, Freddie Mac to credit reporting bureaus – Transunion, Equifax, and Experian – and delivery of Enterprise Resource Planning (ERP) software that providing business intelligence solutions for management and over one hundred sales representatives.

1999–2001 Software Design Engineer, Hewlett-Packard, Fort Collins, CO

Developed a telecommunication network management product that is used by worldwide telecommunication providers.

1998–1999 Software Engineer, Singapore Telecom Limited, Singapore

1995–1998 Software Engineer & QA Team Leader, Shanghai Tandem software Systems Co. Ltd. (Huateng), Shanghai, China
Developed the "Golden Card" project for China UnionPay from 1995 -1998 at Huateng, Shanghai, China– the first inter-bank credit card switch centers in China with the capacity of processing 3000 transactions per second and providing funds clearing service among banks, merchants, and foreign bankcard associations.

1991–1995 Software Engineer, Jiangsu Electronics Company, Nanjing, China

PROFESSIONAL TRAINING

2008 – 2009 Core Business Competencies Online Certificate classes at Colorado State University
2003 – 2010 Oracle eBusiness Suite training, Salesforce.com training, Fair Credit Report Act training at Kroll Factual Data
1999 – 2002 Switches and routers, XML, NMOS, UML, ClearCase, I18N/L10N training at Hewlett-Packard
1995 – 1998 TANDEM training and QA training at Shanghai Tandem software Systems Co. Ltd.

CITIZENSHIP: United States

LANGUAGE: Chinese, English

REFERENCES

Professor Carlos Martins-Filho
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