

# Tao Chen

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CONTACT INFORMATION	Department of Economics University of Waterloo Hagey Hall of Humanities Waterloo, ON, Canada N2L 3G1	Phone: (519) 888-4567 ext. 32558 Fax: (519) 725-0530 E-mail: <a href="mailto:t66chen@uwaterloo.ca">t66chen@uwaterloo.ca</a> <a href="https://uwaterloo.ca/economics/people-profiles/tao-chen">https://uwaterloo.ca/economics/people-profiles/tao-chen</a>
RESEARCH INTERESTS	Econometric Theory, Applied Econometrics, Functional Data Analysis, Machine Learning, Labour Economics	
EDUCATION	University of Connecticut, Storrs, CT, USA	
	Ph.D., Economics (with M.A. degree)	2003.8 - 2011.6
	Ph.D., Mathematics (A.B.D. with M.S. degree)	2005.8 - present
	Shanghai International Studies University, Shanghai, China	
	B.A., Finance	1997.9 - 2001.7
PROFESSIONAL EXPERIENCE	Academic Experience	
	Tenured Professor at University of Waterloo, cross-appointed to Statistics and Actuarial Science, Faculty of Mathematics	2020.9 - present
	Economics, Faculty of Arts	2018.7 - present
	Senior Research Fellow of Labor and Worklife Program, Harvard University	2015.9 - 2021.8
	Assistant Professor of Economics, University of Waterloo	2011.7 - 2018.6
	Others	
	Founding Director of Big Data Research Lab, University of Waterloo	2014.5 - present
	KPMG, Shanghai	2001.7 - 2002.8
PUBLICATIONS	What determines momentums in professional basketball games?, <i>Journal of Applied Statistics</i> , forthcoming (Q. Fan and K. Liu).	
	Semiparametric efficiency for censored linear regression models with heteroskedastic errors, <i>Econometric Theory</i> , 34 (2018), 228-245.	
	Differences across versions of Penn World Table: A functional data analysis approach, <i>Economics Letters</i> , 170 (2018), 179-184 (with J. DeJuan and R. Tian).	
	Testing conditional mean independence under symmetry, <i>Journal of Business &amp; Economic Statistics</i> , 36 (2018), 615-627 (with Y. Ji, Y. Zhou and P. Zhu).	
	A Functional Data Approach to Model Score Difference Process in Professional Basketball Games, <i>Journal of Applied Statistics</i> , 45 (2018), 112-127 (with Q. Fan).	
	Single Game Career High VS. Highest Season Average of NBA Players, <i>Journal of the Chinese Statistical Association</i> , 56 (2018), 25-36 (with Y. Li).	
	A simple consistent test of conditional symmetry in symmetrically trimmed regression models, <i>Journal of Econometrics</i> , 198 (2017), 29-40 (with G. Tripathi).	

Model-based versus data-driven approach for road safety analysis: Do more data help? *Transportation Research Record: Journal of the Transportation Research Board*, No. 2061, (2016), (with L. Thakali and L. Fu).

Models specification tests and the estimation of treatment effects: an application with random and nonrandom administrative records, *Journal of Economic and Social Measurement*, 41 (2016), 1-16 (with K. Couch).

Nonparametric instrumental variable estimation in practice, *Journal of Econometric Methods*, 5 (2016), 153-177 (with P. Shaw and M. Cohen).

Changing tastes: Estimating changing attribute prices in hedonic and repeated sales price indices, *Journal of Real Estate Finance and Economics*, 52 (2016), 141-175 (with J. Harding).

An approximation of logarithmic functions in the regression setting, *Statistical Methodology*, 23 (2015), 50-58 (with K. Couch).

Intragenerational mobility and the ratio of permanent to total inequality, *Applied Economics*, 46 (2014), 4399-4408 (with G. Bayaz and K. Couch).

Semiparametric efficiency bound for partially linear single-index regression models, *Journal of Multivariate Analysis*, 130 (2014), 376-386 (with T. Parker).

Permanent and transitory inequality and intra-generational mobility, *Economics Letters*, 120 (2013), 200-202 (with K. Couch).

Testing conditional symmetry without smoothing, *Journal of Nonparametric Statistics*, 25 (2013), 273-313 (with G. Tripathi).

Vibration modes of 3n-gaskets and other fractals, *Journal of Physics A: Mathematical and Theoretical*, 41 (2008) 015101 (21pp) (with N. Bajorin, A. Dagan, C. Emmons, M. Hussein, M. Khalil, P. Mody, B. Steinhurst and A. Teplyaev).

Vibration Spectra of Finitely Ramified, Symmetric Fractals. *Fractals*, 16 (2008), 243-258 (with N. Bajorin, A. Dagan, C. Emmons, M. Hussein, M. Khalil, P. Mody, B. Steinhurst and A. Teplyaev).

#### WORKING PAPERS

A Potential Objective Marker in First-episode Schizophrenia based on Abnormal Niacin Response (with Y. Gu, L. Xu, R. Gan, G. Wu, X. Tang, Y. Wei, H. Cui, L. Hui, Y. Tang, C. Li, T. Chen, C. Wan, J. Wang and T. Zhang).

A cognitive dissonance interpretation of the context effect in ethical decision-making experiments – evidence from a laboratory bribery game (with S. Wang, revision at *Journal of the Economics Science Association*).

Artificial Intelligence Assisted Niacin Skin Flush Screening in Early Psychosis Identification and Prediction (T. Zhang, W. Xu, R. Tian and J. Wang, under review).

Seeing is Behaving: Applying the Revealed-Strategy Approach to Detect Heterogeneous Cooperation in Social Dilemmas (with W. Wang, S. Wang and L. Chen, under review).

The Effectiveness of Consumption Tax on the Reduction of Car Pollution in China (with A. Arcila-Vasquez and X. Lu, under review)

Asymptotic independence property in nonparametric estimation - A good large sample approximation or just a wishful thinking? (with J. Zhang and Y. Zhou, under review).

A Tale of Two Continuous Limits (with Y. Li and R. Tian, under review)

Equity premium puzzle (with J. Xu, under review).

Laboratory evaluation of low cost particle sensors (With B. Tan and Z. Tan, under review).

Assessing the inter-generation mobility - A functional data regression approach (with P. Chausse and K. Couch, under review).

Where Does the Thickness start (with Z. Zhang, under review).

A martingale transformation approach of specification test under weak IV (with G. Tripathi and R. Tian).

Think outside the envelop – Efficiency bound estimation through Extreme Value Theory (With F. Yang).

Functional dynamic factor models (with J. Xu and R. Tian).

What's the optimal wage structure for NBA professional teams? (With Y. Li and A. Yu).

Selecting the optimal sample size in program evaluation studies: A sequential sampling approach.

A structural estimation of the effect of police on crime (with P. Curry and A. Sen).

Estimating and testing censored regression models with endogenous regressors under conditional symmetry (with G. Tripathi).

Functional regression: An application to housing valuation (with J. Harding and R. Tian).

An option value model of mortgage default (with S. Ross and Y. Wang).

Culture and home ownership - evidence from immigrants in Canada (with Q. Du and Y. He).

At Which Risk Level Does the Opposing Investment Philosophies Meet (with Y. Li and K. Liu).

Pre-screening and Treatment of Aortic Dissection Through Analyzing Data of Infinite Dimensions (with Y. Li, K. Liu, X. Lu, J. Qin, P. Qiu, and K. Ye).

How countries are alike (with K. Liu and J. Wei).

#### TEACHING EXPERIENCE

Courses taught at the University of Waterloo 2011.7 - Present

ECON 721: First year Ph.D. Econometrics  
ECON 621: Econometrics I  
ECON 600: Quantitative Methods  
ECON 422: Nonparametric estimation for advanced undergraduate  
ECON 421: Econometric Theory  
ECON 322: Econometric Analysis I  
ECON 321: Introduction to econometrics  
ECON 311: Mathematics for economists II

Courses taught at the University of Connecticut 2005.8 - 2009.5

As an independent instructor I taught Empirical Methods in Economics, Principles of Microeconomics, Principles of Macroeconomics, Problem Solving, Calculus for Business and Economics and Calculus Sequence I-III.

#### PRESENTATIONS

Sept. 2019, “Two applications of Big Data Analysis in Medical Studies”, Nan Kai University, Tian Jin, China.

Feb. 2019, “Seeing is “behaving”: Using revealed-strategy approach to understand cooperation in social Dilemma”, Harvard University, USA.

Sept. 2018, “Seeing is “behaving”: Using revealed-strategy approach to understand cooperation in social Dilemma”, at Shanghai Academy of Social Science, Shanghai, China

Sept. 2017, “Think outside the envelop – Efficiency bound estimation through Extreme Value Theory” at University of Connecticut, CT, USA.

June 2017, “A cognitive dissonance interpretation of the context effect in ethical decision-making experiments – evidence from a laboratory bribery game” at Shanghai University of Finance and Economics, Shanghai, China.

Feb. 2015, “Overeducation? Student Loans? Wage Bargaining and more?” at Harvard University, MA, USA.

Nov. 2014, “An approximation of logarithmic functions in the regression setting – An application to intergenerational mobility study” at Xiamen University, Fujian, China.

May 2014, “A simple consistent test of conditional symmetry in symmetrically trimmed regression models” at Shanghai University of Finance and Economics, Shanghai, China.

June 2013, “Assessing the inter-generation mobility – a functional data regression approach” at Nagoya University, Nagoya, Japan.

Feb. 2011, “Selecting the optimal sample size in program evaluation studies: A sequential sampling approach” at University of Waterloo, ON, Canada.

#### GRANTS

Brilliant Strategy Investment Consulting, China (PI, 2014 – 2017, CAD 82,194).

Wuhan Research Institute, China (PI, 2014 – 2015, CAD 20,000).

HuangHe Talents - City of Wuhan, China (Co-PI, 2015 – 2017, RMB 1,500,000).

Center for Green Buildings and Cities - Harvard University, USA (Co-PI, 2016 – 2017, USD 100,000).

SSHRC - Insight Development, Canada (PI, 2016 – 2018, CAD 31,422).

International Research Partnership - University of Waterloo, Canada (PI, 2016 – 2018, CAD 20,000).

HSS Endowment Fund - University of Waterloo, Canada (PI, 2016, CAD 5,500).

Wuhan Research Institute, China (PI, 2017, CAD 20,000).

Wuhan Research Institute, China (PI, 2017, CAD 10,000).

International Research Partnership (China) - University of Waterloo, Canada (Co-PI, 2017 – 2018, CAD 20,000).

Zerone Research Lab, Ontario, Canada (PI, 2017 – 2023, CAD 85,000).

PaaS Global Inc., Hong Kong, China (PI, 2018 – 2022, CAD 130,000).

Mitacs—Betterworth Inc., Ontario, Canada (PI, 2019–2020, CAD 45,000)

Microsoft’s AI Institute funding for AI in Social Good, Ontario, Canada (PI, 2020–2021, CAD 25,000)

#### DOCTORAL STUDENTS SUPERVISION (MAJOR ADVISOR)

Renfang Tian, Tenure Track Assistant Professor at Western University, King’s University College, as her first placement.

PREPARED

October 27, 2020