Richard Y. CHEN

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Education

The University of Chicago — 2015/09 - 2020/06 (expected)
Ph.D. candidate, Statistics
Advisor: Professor Per A. Mykland
Thesis: "Particles and waves: in-fill asymptotic analyses of dynamic data in time and frequency domains"

Nankai University — 2009/09 - 2013/06
B.S., Mathematics; B.A., Economics

Preprints

The Fourier transform method for volatility functional inference by asynchronous observations.
Richard Y. Chen. 2019. *arXiv:1911.02205*

Inference for volatility functionals of multivariate Itô semimartingales observed with jump and noise.
Richard Y. Chen. 2018. *arXiv:1810.04725*.

Publication

Model-free approaches to discern non-stationary microstructure noise and time-varying liquidity in high-frequency data.
Richard Y. Chen, Per A. Mykland. *Journal of Econometrics (200) 2017, 79-103.*

Work in Progress

Reassessment of long-range dependence of volatility by the estimation of volatility spectrum using high-frequency data.
Richard Y. Chen. 2019

Volatility functionals of Itô semimartingales: microstructure noise and time-domain adaptive estimation.
Richard Y. Chen. 2019

Softwares

`ScalaMLE`: fast computation for Gaussian processes likelihood by stochastic approximation
`SpecHFE`: some nonparametric time-domain and spectral methods for high-frequency data

Teaching

Teaching assistant for college classes
Applied linear regression (introductory course, c. 160 students, 2016 spring, 2017 spring)
Statistical theory and methods (advanced course, 36 students, 2015 autumn)

Teaching assistant for professional graduate classes
Stochastic calculus, MSFM (c. 100 students, 2018 winter, 2019 winter)
Business statistics, MBA (96 students, 2016 spring)

Teaching assistant for Ph.D. core classes
Mathematical statistics (Bayes, high-dimensional statistics, 2019 spring)
Mathematical statistics (MLE, hypothesis testing, 2017 winter)

Volunteer tutor for statistics in the UChicago College Core Tutor Program 2015

Presentations

Stevanovich Center Seminar, the University of Chicago (upcoming) 2019/12
Joint Statistical Meeting, Denver 2019/07
SoFiE annual conference, Fudan University 2019/06
Argonne National Laboratory summer student workshop 2017/08
SoFiE summer school, Kellogg School of Business, Northwestern University 2017/07
SoFiE annual conference, Stern School of Business, New York University 2017/06
Market Microstructure and High Frequency Data, the University of Chicago 2017/06
SMSA workshop, Humboldt-Universität zu Berlin 2017/02
Statistical seminar, Department of ISOM, HKUST 2016/02
Statistics graduate student pizza talks 2016/01, 2017/02, 2018/11

Fellowship & Awards

The Stevanovich Fellowship, the Univesity of Chicago 2019
Travel awards, the Society for Financial Econometrics 2017, 2019
Annual scholarship for academic distinction 2010, 2011, 2012
Gold medal, Shiing Shen Chern Mathematics Contest 2010

Professional Services

Referee for *Journal of the American Statistical Association* 2019
Referee for *Journal of Econometrics* 2017, 2018, 2019

Computational research aide, Argonne National Laboratory, MCS 2017
Efficient computation of Gaussian process likelihood, ozone data

Statistical consulting for UChicago faculty and graduate students 2016, 2017
Astrophysics: Gaussian processes for gravitational wave simulation
Psychology: mixed effect models for moral judgement experimental data

Intern, IBM Watson Analytics, statistics team, Chicago 2015
Generalized linear models for zero-inflated count data
Multivariate time series forecasting under multiple hierarchy structures

updated in 2019/11 [check update]