Richard Y. CHEN

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Position

Rice University — 2020/09 - present
Postdoctoral researcher
Sponsor: Professor Philip A. Ernst

Education

The University of Chicago — 2015/09 - 2020/08
Ph.D. candidate, Statistics
Advisor: Professor Per A. Mykland
Thesis: "High-frequency functional inference 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. 2020

Volatility functionals of Itô semimartingales: microstructure noise and time-domain adaptive estimation.
Richard Y. Chen. 2020

Softwares

`PCA4TAQ`: a pipeline of query, cleaning, principal component analysis of big data
`SpecHFE`: nonparametric time-domain and spectral methods for high-frequency data
`ScalaMLE`: fast computation for Gaussian processes likelihood by stochastic approximation

Teaching

Teaching assistant for college classes
Introduction to mathematical probability (advanced course, 90 students, 2020 spring)
Introduction to probability models (advanced course, 33 students, 2020 winter)
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	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

Services

Referee for *Journal of the American Statistical Association*	2019
Referee for *Journal of Econometrics*	2017 - 2020
Referee for *Management Science*	2020

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

Organizing committee for department faculty-student lunch 2016

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 2020/09 [check update]