SIHAN ZHA

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EDUCATION

NEW YORK UNIVERSITY New York, NY
The Courant Institute of Mathematical Sciences
MS in Mathematics in Finance (Dec. 2020)

- ***Future Coursework:*** Black-Scholes model, portfolio theory, arbitrage-based pricing of derivative securities, market microstructure, risk management, Monte Carlo, dynamic programming in Java

UNIVERSITY OF CHICAGO Chicago, IL
MA in the Social Sciences, Economics Concentration (Aug. 2019)

- ***Coursework:*** PhD courses: machine learning & large-scale data, game theory, mechanism design, econometrics, microeconomics. Financial econometrics (Booth), statistical modeling on Python
- ***Awards:*** Social Sciences Scholarship ($38,664, granted 3/50)

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN Champaign, IL
BS in Mathematics with Highest Distinction, BA in Economics, *Magna Cum Laude* (Dec. 2017)

- ***Coursework:*** Calculus, real analysis, linear & abstract algebra, ODE, probability & stats, complex variables, linear programming, numerical methods, monetary economics, macroeconomics
- ***Awards:*** Highest University Honor "Bronze Tablet" (top 3% in the college);

EXPERIENCE

GF SECURITIES Hefei, China
Summer Internship (Summer 2017)

- Web scraped financial data using Python and formulated stock report based on fundamentals
- Estimated various GARCH models with Eviews to fit daily stock prices and predict volatility
- Cooperated with bank branches to improve operating in-branch agencies by gathering user data

PRICEWATERHOUSECOOPERS Shanghai, China
Summer Internship: Financial Services-Assurance (Summer 2016)

- Assisted in auditing half-year financial report of a large commercial bank
- Used Microsoft Excel and Word to calculate departmental revenue and compile draft report

PROJECTS/RESEARCHES

UNIVERSITY OF CHICAGO Chicago, IL
Individual MA Degree Thesis: Matching with Noisy Signals, Faculty Advisor: Prof. Philip J. Reny

- Established many-to-one matching model abstracted from college admission and job market
- Used economic methods involving mathematical analysis and probability theory to measure inefficiency caused by the noisy ability signals sent from applicants to employers
- Proved Nash Equilibrium strategies for each college with noisy signals in different scenarios

Econometrics/Machine Learning Project: Application of Generalized Random Forests Method

- Implemented machine learning application based on Generalized Random Forests (GRF) method combining GMM and random forests proposed by Athey, Tibshirani, & Wager in 2019
- Discussed extensions on estimating treatment effects and open problems in the paper with authors
- Extended and applied GRF method to million-scale dataset with multiple IVs using R and cloud computing server, together with multiple LASSO methods in the first stage of IV regression
- Performed KNN and kernel methods to the same dataset and compared results with GRF method

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN Champaign, IL
Illinois Geometry Lab, Advisors: Dr. Ruth Davidson and Dr. Rosemary Guzman

- Review papers on phylogenetic trees and researched on trees in non-Euclidean space
- Proposed combinatorial algorithm to measure tree distance between different numbers of taxa
- Published a paper and used Python to implement and visualize the algorithm proposed

COMPUTER SKILLS/OTHER

Programming Languages: Python, R, Java
Other Software: LaTeX, Microsoft Office, Eviews, Mathematica
Languages: Mandarin (Native), English (fluent)
Certificate: Passed CFA Exam Level I (scored above the 90th percentile)