Jiezheng Wei

Contact Information

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Education

Ph.D. Student, Economics, *Singapore Management University*, Aug. 2022 –

M.Sc. Economics, *The Chinese University of Hong Kong, Shenzhen*, Sep. 2019–July 2021

B.Sc. Mathematical Economics and Finance, *Central University of Finance and Economics*, Aug. 2013–July 2017

Professional Experience

Jun. 2021 - Jul. 2022	Research Associate, SME, *The Chinese University of Hong Kong, Shenzhen*
Nov. 2021 - Jul. 2022	Tutor, Muse College, *The Chinese University of Hong Kong, Shenzhen*
Jan. 2019 - Jul. 2019	Research Assistant, Macroeconomy Research Center, *Anxin Securities Co., Ltd.*
Jun. 2017 - Dec. 2018	Vice Executive, Investment Center, *Beijing Dusheng Investment Fund L.P.*
Jan. 2017 - May 2017	Internship, Investment Research Center, *Cheung Kong Graduate School of Business*

Research Interests

Primary	Econometrics, Machine Learning
Secondary	Blockchain Economics

Research Projects

"A Survey on Debiased Machine Learning Methods." Individual work.

In the classic semi-parametric context, that is, we have a finite dimensional parameter of interest (θ_0) to be estimated with an infinite-dimensional nuisance parameter (η_0) existing, naively estimate η_0 by machine learning first and then estimate θ_0 by plugging in $\hat{\eta}_0$ and moment conditions could introduce bias in $\hat{\theta}_0$ because of the slow convergence rate in the first step, typically slower than $n^{-1/2}$. A newly-developing method called double/debiased machine learning (DML) moves out the bias by two ingredients: (1) revising moment conditions to be orthogonal with respect to the nuisance parameter; (2) cross-fitting which splits the sample and then averages $\hat{\theta}_0$ on each sub-sample similar to cross-validation. This article surveys the theory and methods of DML and its application in partially linear model, semi-parametric IV model, semi-parametric DID model, and estimation of CATE.

"Predict Chinese A-share Stock Market via Machine Learning." Joint with classmates.

Based on classic asset pricing theory, the future return of a certain asset can be treated as a conditional expectation function of current information. Machine learning weapons can powerfully predict the assets by dealing with high-dimensional data and approximating highly nonlinear functional form of the expectation function. We apply machine learning (ML) methods LASSO, Ridge regression, Elastic Net (EN), Random Forest (RF), Neural Network (NN) to predict stocks return in Chinese A-share market, and we compare their out of sample R^2 by the data since 2018. And we construct portfolios among different machine learning methods. Our empirical study indicates the best predicting model is the neural network. The machine learning portfolios based on NN nearly earns 1.8 times of market index.

"On the Transition from PoW to PoS." Individual work.

In October 14, 2020, Ethereum, a blockchain which currently still uses PoW consensus mechanism, introduced the staking deposit contract and staking to its ecosystem. In few months, Ethereum will transform from PoW to PoS. While little FinTech literature talked about PoS mechanism, this paper provides a framework for analysing the transition of blockchain from PoW to PoS, with special attention to the optimal timing of the transition, the efficiency of the transition-type mechanism, and the impacts on transaction fees.

Presentation

2021 International Conference on Smart Finance (ICSF), School of Management and Economics, The Chinese University of Hong Kong, Shenzhen

Teaching Experience

The Chinese University of Hong Kong, Shenzhen

Spring 2022 TA for "DMS3002 Applied Probability and Stochastic Processes" to Prof. Rui Chen
Fall 2021 TA for "ECO3080 Machine Learning in Business" to Prof. Qihui Chen
Spring 2021 TA for "ECO3080 Machine Learning in Business" to Prof. Chunrong Ai
TA for "ECO2121 Basic Statistics" to Prof. Liyu Dou
TA for "ECO6125 Chinese Economic Policies and Their Effects“ to Prof. Xiaohuan Lan
Fall 2020 TA for "ECO6102 Advanced Econometrics“ to Prof. Chunrong Ai

Prize and Awards

2021 Presidential Award for Outstanding Master's Students, *The Chinese University of Hong Kong, Shenzhen*
2021 First Class Scholarship for Academic Excellence, *The Chinese University of Hong Kong, Shenzhen*
2019 Second Class Subject Prize, *The Chinese University of Hong Kong, Shenzhen*
2019 Bronze Entrance Scholarship, *The Chinese University of Hong Kong, Shenzhen*

May, 2023