

SHUYAN HUANG

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EDUCATION

Northwestern University	Evanston, IL, US
Ph.D candidate in Economics	2020 - 2025
University of Chicago	Chicago, IL, US
M.A in Computational Social Science	2018 - 2020
Peking University	Beijing, China
B.S in Finance	2014 - 2018
B.S in Computer Science	2014 - 2018

PAPERS

Estimating Household Income, Asset And Consumption Dynamics by Recursive Neural Networks.

- Build a flexible model for the reduced-form dynamics of household's income, asset and consumption
- Prove the Recursive Neural Networks is consistent as a best predictor for the outcome variables of interest, and the convergence rate is $n^{-1/4}$
- Apply the estimator to the Panel Study of Income Dynamics (PSID) data and find heterogeneity patterns in persistence of income and the partial consumption insurance against income shocks

Adaptive Treatment Assignment in Sequential Experiments towards Optimal Targeting Policy.

- Design sequential experiments for treatment allocations based on individual characteristics
- Propose a general algorithm based on the bounded flexibility of the continuous regression functions and derive an upper bound for its regret.
- Propose a variance adaptive algorithm for the case of discrete covariates and prove asymptotic minimax optimality. Simulation results show superior performance compared to Neyman allocation.

EXPERIENCE

Research Assistant. Advised by Prof. Arlene Wong, Princeton University	Summer 2019
<ul style="list-style-type: none">• Developed a Python parallel program to identify and group the same product in Comscore Web Transaction Data, based on Levenshtein Distance between product names.	
Research Assistant. Advised by Prof. Tengyuan Liang & Lin Cong, University of Chicago	Summer 2018
<ul style="list-style-type: none">• Implemented web crawlers to download contents of The Wall Street Journal, company filings from SEC Edgar, and FOMC meeting transcripts; Tokenized and preprocessed the texts.• Implemented locality-sensitive-hashing clustering and topic factor via SVD; Tested prediction on VIX.	
Research Assistant. Advised by Prof. Yu Zhang & Ming Gao, Peking University	Oct. 2017 - Feb. 2018
<ul style="list-style-type: none">• Matched the Innofund firm data with the Above-scale Industrial Firms Panel data.• Implemented web crawler; Collected information on the firms and improved matching accuracy.• Conducted logistic regressions and DID to measure the Innofund's effects on the firms' innovation.	
Research Assistant. Advised by Prof. Chenxu Li, Peking University	Jan. 2017 - Nov. 2018
<ul style="list-style-type: none">• Implemented an approximate MLE based on a likelihood-approximation algorithm for the Heston model; Verified the convergence of the approximate likelihood to the benchmark	

SKILLS

Programming Languages: Python, Stata, MATLAB, R
Languages: Mandarin Chinese, English