Huilin Zhang

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Education

Purdue University, PhD, MS in Economics   2019 - Expected 2025
- GPA: 3.7/4. Course: Causal Inference, Database Management, Machine Learning, Data Visualization, Deep Learning

Sun Yat-sen University, MA in Economics   2017 - 2019
- First Prize Scholarship for Graduate Students, Outstanding Master's Thesis (Top 1.6%)

Wuhan University, BA in Economics   2013 - 2017
- Outstanding Student Scholarship (2013-2014, 2014-2015), Outstanding Freshman Scholarship

Project Experiences

Forecasting the Green Bond Index (Github)
- Built an automated ETL data pipeline to extract financial and macroeconomic data from an online database through API; improved raw data generation efficiency by 20%.
- Leveraged Python and SQL for data pre-processing (missing values, duplicates, and outliers) and feature engineering to enhance model stability and predictive performance.
- Developed LSTM neural networks and random forest models to forecast the Green Bond Index, outperforming ARIMA in capturing market patterns and temporal dependencies.
- Improved the baseline model prediction accuracy by 10% through hyperparameter tuning (grid search).

The Productivity Externality of Working From Home: Welfare and Policy Implication (PDF)   Doctoral Thesis
- Conducted deep-dive analysis based on 24M+ household survey data to extract insights on the relationship between remote work wages and employment across different cities and industries; set the foundation for the quantitative model.
- Applied econometric techniques (e.g., generalized method of moments, regression analysis, instrumental variables) to estimate productivity spillover effects among onsite and remote workers.
- Developed a discrete choice model and quantified the socially optimal balance of remote and onsite work in Matlab; identified the insights on how subsidizing onsite work could increase social welfare by 2%, with remote technology facilitating a reduction in subsidy costs by 4 percentage points.
- Presented research findings that quantified the correlation between social welfare improvement and onsite employment size & workload.

How Globalization Changes the Level and Structure of Executive Compensation with David Hummels, Jakob R. Munch
- Enhanced the principal-agent model flexibility by integrating diverse CEOs and firms to examine how trade shocks, CEO ability, and firm characteristics influence executive compensation.
- Analyzed matched worker-firm panel data (1K+ firms, 12K+ observations) using instrumental variable regression models to quantify the causal impact of globalization on CEO pay.

Work Experiences

Research/Teaching Assistant, Instructor, Purdue University   08/2019 - Present
- Developed Python scripts to download and process bulk data, created presentation slides to communicate findings, and collaborated with a faculty member in weekly meetings to enhance research outcomes.
- Served over 600 students across 15 courses with class sizes ranging from 10+ to 80+. Awarded the Krannert Outstanding Teaching Certificate for achieving an average score of 4/5 on course evaluations.

Assistant Manager, China Merchants Bank   12/2016 - 02/2017
- Guided clients through personal credit loan applications, conducted financial assessments, approved 70+ loans totaling $1.4M, mentored a team member, and marketed financial products through client outreach.

Team leader, Student Loan Project, China Development Bank   10/2016 - 12/2016
- Led a team of three to review 30K contracts valued at a total of $40M within 15 days, ensuring data accuracy, compliance, and loan recoverability. Organized and archived contracts for efficient retrieval.

Technical Skills

Programming: Python (Pandas, Numpy, Matplotlib, Sk-Learn), SQL, R, Matlab, Stata

Analytics Skills: Causal Inference, Machine Learning, Economic Modeling, Data Analysis, Data Pipeline, A/B Test, Predictive Analytics, Data Visualization (Tableau, PowerBI), Clustering