Haoran Wang

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EDUCATION

Cornell University   **August 2022 - May 2024**
MS in Applied Economics and Management   *Ithaca, US*

New York University   **June 2021 - August 2022**
MS in CEI (Computer Science Department at the Courant Institute of Mathematical Sciences)   *New York, US*

Beijing Institute of Technology   **September 2016 - June 2020**
BS in Electronic Information Engineering / BA in Economics   *Beijing, China*

RELEVANT COURSEWORK

Mathematics: Linear Algebra, Probability and Mathematical Statistics, Physical-Mathematical Equations and Special Functions(PDE), Complex Function and Integral Transform, Mathematical Analysis I & II, Mathematical Techniques for Computer Science Applications, Introduction to Analysis (MATH 3110, 23 fall)

EECS & Data Science: Machine Learning, Database System, Data Structure and Algorithm Design, Social Networks, Foundation of Networks and Mobile Systems, Google Advanced Data Analytics(Certificate)

Economics: Applied Econometrics (AEM 6120), Risk Simulation and Monte Carlo Methods, Behavioral Economics & Public Policy, Applied Macroeconomics (AEM 7040 PhD Level, 23 fall)

INTERESTED FIELDS

Food and Agricultural Economics, Environmental and Resource Economics, Empirical Industrial Organization, Public Policy Analysis

RESEARCH EXPERIENCE

Cornell University   **May 2023 – Present**

Master Thesis   **Ithaca, US**
Collaborators: Prof. Aaron A. Adalja, Prof. Bradley Rickard and Dr. Anne Byrne

- Designed a research framework to explore the effects of different labeling, information disclosure, and location on plant-based meat products in retail stores, utilizing Information Resources, Inc. (IRI) Scanner Data.
- Extend best practices for BLP estimation in Conlon and Gortmaker (2023) incorporating micro data and implementing them in PyBLP package, then solved counterfactual pricing equilibria.
- Designing surveys and collecting data for empirical testing using Qualtrics and a dedicated website from 1200 participants.
- Incorporated the results from experimental data and IRI data to explain how labels, product placement in different aisles, and information about nutrition facts and environmental friendliness affect consumer behavior.

Graduate Research Assistant   **Ithaca, US**
Supervisor: Prof. Aaron A. Adalja
Project: The Impact of Specialist Versus Generalist Employee Roles on Supplier Welfare, Retail Pricing, and Firm Profit in Experiential Goods

- Designed and refined a sophisticated oTree-based behavioral experiment simulating a retail firm's sourcing and marketing decision-making process to assess its impact on financial performance, drawing insights from diverse participants recruited through Prolific.
- Revamped Berg et al. (1995)'s Trust Game by modifying the grouping logic to incorporate a probabilistic algorithm for automated 'money sent back' actions.
- Designed and refined an immersive simulation environment where participants assumed the role of a coffee shop chain's General Manager, responsible for both sourcing and marketing decisions, to analyze the interplay and impact of different managerial functions on the firm's profitability; meticulously developed experimental parameters and scenarios to accurately capture the relationship between decision-making processes and business outcomes.

Project: [Voluntary Quality Disclosure in Credence Good Markets](#)

- Helped to update the working paper by applying the BLP (Berry, Levinsohn, and Pakes) method, and integrated and designed 'Micro-moments' into the model, improving the finite-sample performance of the BLP estimator.

Graduate Research Assistant   **Ithaca, US**
Supervisor: [Prof. David Just](#)
Project: The Food Pantry Program

- Conducted a comprehensive field study at the Greece Center 4 Hope in Rochester, with a focus on food pantry operations and the SNAP program. Disseminated surveys to assess participants' attitudes towards and involvement in the SNAP program and food pantry services, as well as to gather demographic information.
- Managed the collection and entry of survey data, laying the groundwork for subsequent analysis.
- Conducted follow-up surveys through phone calls, emails, and text messages to gather essential data and ensure comprehensive feedback.

Graduate Research Assistant   **Ithaca, US**
Supervisor: [Prof. Heather Schofield](#)
[Project: Public Rice Distribution and Diabetes Rates in India](#)

- Executed a comprehensive literature review exploring the causal link between diabetes and dementia using India's Public Distribution System (PDS).

[Project: The Causal Effects of Income Volatility and Income Risk](#)

- Contributed to a \$2.5 million four-year randomized controlled trial, under the leadership of PI Heather Schofield, aimed at discerning the mental health, well-being, and stress biomarkers affected by income volatility.
- Conducted advanced regression analyses with Stata to explore the effects of income volatility on mental health, culminating in a 42-page analytical report.
- Assisted in preparing all required documents for Cornell University IRB approval, ensuring completeness for submission. This included sponsor letters, a well-written protocol, IRB approval or letters of support from collaborating entities, the Investigator's Brochure, investigational device descriptions, informed consent forms, data collection forms, CVs, and training verification.

Project: Ambient Air Temperature and Productivity and Learning at Work

- Conducted an extensive literature review and assisted the professor in filling in the details of the literature review for a working paper.
- Identified air pollution as a potential confounding variable in the study on the impact of temperature on participants' performance, leading to a more robust analysis. This insight prompted the inclusion of the Air Pollution Index (API) in the research methodology, ensuring a comprehensive assessment of environmental factors affecting the results.
- Enhanced the meteorological dataset and performed calculations with weather data by utilizing [MetPy](#) in Python.

Graduate Research Assistant   **Ithaca, US**
Supervisor: [Prof.Sylvia Hristakeva,](#) and [Prof.Julia Levine](#)
[Project: Effects of Hurricanes on Drug Adherence and Health Outcomes](#)

- Developed and executed a GIS-based mapping program that merged complex data sets to produce comprehensive maps, detailing the number of grocery stores affected by hurricane-induced closures and analyzing the subsequent shifts in household purchasing patterns and across different regions.

Project: Demand Estimation in the Laundry Market

- Utilized pyBLP to generate histograms and tables for own price elasticities, and designed algorithms to rectify deficiencies in pyBLP's generation of cross-price elasticities.
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Project: Hospital Price Transparency

- Engineered a data consolidation process to standardize varying formats of hospital pricing data from numerous CSV and Excel files using Python, facilitating the creation of a coherent, statewide hospital price database for Texas.
- Applied data cleaning and transformation techniques to align diverse datasets, focusing on key financial metrics, thereby enabling accurate economic analysis and supporting healthcare policy research.

PUBLISHED PAPER AND WORKING PAPERS

- **Yunwei Li, <u>Haoran Wang</u>, Yutong Hu, Yu Hao** *Ecological Compensation and Carbon Emission Reduction: The Effect of Vertical Incentives and Horizontal Coordination* Prepare for submission: Ecological Economics [Details]

  - Analyzed the impact of Ecological Transfer Payments on carbon emissions across 2,394 Chinese counties (2000-2017) using a time-varying Difference-in-Differences method.
  - Identified significant emission reductions attributable to ETPs, confirmed through parallel trend tests, placebo tests, and random sampling for robustness.

- **<u>Haoran Wang</u>, Yunwei Li, Lijinyu Liu, Yu Hao** *Illuminating Change: Evaluating Photovoltaic Poverty Alleviation's Economic Impact in China* Prepare for submission: World Development [Details]

  - Responsible for constructing the main framework and composing the working paper.
  - Led a comprehensive Research on the impact of photovoltaic (PV) poverty alleviation initiatives in rural China (2000-2019), analyzing a dataset of approximately 41,426 data points from various governmental levels.
  - Formulated and tested four pivotal hypotheses, demonstrating the multifaceted benefits of PV initiatives on rural economies and environmental sustainability.

- **<u>Haoran Wang</u>, Yunwei Li, Kui Chen, Yu Hao** *Would the decoupling of CSR "walk" and "talk" affect financial performance – Evidence from listed renewable energy companies* Prepare for submission: The Journal of Business Ethics [Details]

  - Analyzed panel data of 70 Chinese renewable energy companies (2011-2020), innovatively classifying their environmental disclosure drivers into four categories: voluntary disclosure, resource dependence, compliance motivation, and disclosure inability.
  - Discovered a positive correlation between CSR "talk" and financial performance under voluntary and resource-dependent disclosures, contrasting with a negative correlation in compliance-driven and inability disclosures.

- **Zhang Y, Li J, <u>Wang H</u> and Choi S-CT (2021)** *Sentiment-Guided Adversarial Learning for Stock Price Prediction* Front. Appl. Math. Stat. 7:601105. *doi: 10.3389/fams.2021.601105*

  - Explored sentiment-guided adversarial learning techniques for stock price prediction by incorporating sentiment information from Twitter, leading to improved model generalization and prediction accuracy.
  - Participated in the design of sentiment analysis methodologies and cooperated in modifying the manuscript for the paper: "Sentiment-Guided Adversarial Learning for Stock Price Prediction."
  - The citation in Google Scholar is 18

INDUSTRY EXPERIENCES

SAP   **December 2018 - March 2019**
Software Engineering Intern   *Beijing, China*
- Contributed to the implementation of a comprehensive logistics and warehousing solution for Nadro, a prominent business group in Mexico with multiple factories, logistics, and storage centers, addressing complex supply chain management challenges.
- Implemented a user interface utilizing C++ and the Windows Presentation Foundation (WPF) framework for enhanced user experience.

Huatai Securities   **March 2020 - June 2020**
Intern   *Beijing, China*
- Studied the impact of a specific option margin system on option pricing and obtained the arbitrage interval.
- Conducted market trend analyses and case studies on fintech companies, culminating in a comprehensive written report.

SKILLS

Languages: Python, Java, C, C++, HTML/CSS, SQL, Matlab, Stata, R

Other Data Science Tools: Jupyter, NumPy, Pandas, Sklearn, Matplotlib, ggplot2, Git, Tableau

Machine Learning Skills: Linear Regression, Hypothesis Testing, Decision Tree, Random Forest, Gradient Boosting, Clustering, Natural Language Processing, Exploratory Data Analysis, Feature Selection and Dimension Reduction, Image Processing