

Xuhang Fan (Shawn)

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Education

Duke University

United States

Master of Arts in Economics; GPA 4.0/4.0

2022/08 – 2023/12 (expected)

- **Honors:** M.A. Merit Scholar (twice, for outstanding academic performance)

Zhejiang University

China

Bachelor of Science in Economics; GPA 3.9/4.0 (*graduate with honors*)

2018/08 – 2022/06

- **Honors:** University Scholarships (twice, top 8% and top 20%), Student Leadership Award, Academic Excellence Award

Working Papers

Online Shopping Addiction – Evidence from a Field experiment

with Prof. [Xiao Liu \(NYU\)](#), Prof. [Zijun \(June\) Shi \(HKUST\)](#), and Chen Cao

2023/05 – Present (Pre-testing)

Keywords: *shopping addiction, field experiment, self control*

- **Field experiment:** designed an online-based field experiment to identify and quantify addictive online shopping behavior using Rational Addiction and Temptation models
- **Structural estimation:** followed Digital Addiction model (Allcott, Gentzkow, and Song 2022) to estimate parameters of Habit formation and Temptation through data, finished the Simulation study to verify the model
- **Software development:** developed a cross-system scraper utilizing Playwright and constructed a user-friendly Python GUI to facilitate collection of shopping history data
- **Survey design:** created surveys for experiments

Fixing Moral Blindspots: The Role of Uncertainty and AI agent

Solo-authored, advised by [Pëllumb Reshidi \(Duke\)](#)

2023/02 – Present

Keywords: *cheating, ming game, decision under uncertainty*

- **IRB request and pre-registration:** finished the IRB request and pre-registered the experiment in AsPredicted
- **Lab experiment:** designed an individual-level online experiment to investigate when deception is undetectable, whether pure uncertainty and AI framing can promote honesty
- **Coding:** made a real-time 3D dice-rolling game through o-Tree and JavaScript
- **Data analysis:** implement GLM to analyze deception data, clustering in player-level and controlling round effect

Sabermetrics, Recruitment, and Salaries: Unraveling the Moneyball Effect

with Prof. [Julia Hur \(NYU\)](#)

2022/08 – Present

Keywords: *sabermetrics, diversity, wages, Major League Baseball*

- **Scraping and Data clean:** scraped headshots of MLB players during 1988-2019, compiled team and player level data
- **Deep learning:** replicated a deep convolutional neural network model (Wu et al. 2018) for race classification
- **Data analysis:** estimated team-level recruitment and salaries change after adoption of sabermetrics using FE OLS, estimating player-level data through staggered DID (ongoing)

Uncertainty, Moral Cost, and Deception

Solo-authored

2020/04 – Present

Keywords: *cheating, cheap talk game, causal state space, belief in karma*

- **Lab experiment:** conducted a lab experiment to research whether the moral cost is the key factor to coordinate the uncertainty puzzle: uncertainty can promote either honesty or dishonesty; test the effect of uncertainty on deception in risk and ambiguity form; explained the results through a modified casual state space model
- **Coding:** made a multi-stage two-player cheap talk game in o-Tree
- **Data analysis:** conducted OLS regression on the moderation effect of moral cost and perceived uncertainty forms

Academic Projects

YouTube Influencers and Brands

work with Prof. [Xinyu Cao \(CUHK\)](#) and Prof. [Jieying Zeng \(NUS\)](#)

2023/05 – Present

- **Scraping and Data management:** scraped metrics data from 21 million Youtube videos using multi-process acceleration in Python, and managed datasets with ujson library
- **Large Language Models (LLM):** deployed *Vicuna-13B* model with quantization in servers with GPU support, and applied the model to detect sponsored content in video descriptions

Parents Select Friends for me? A Field Experiment in rural China

work with Wenyuan Yang, Gansong Luo, and Prof. [Yefeng Chen](#)

2023/02 – 2023/06

- **Field experiment:** assist with the design of parent-side and children-side field experiments, conducted the experiment in a preliminary school in an impoverished region of China.
- **Coding:** reproduced random matching and stable roommate matching (Irving 1985) algorithms; coding and debugging the experiment in o-Tree

Wrong But Strong: How do Superstition shapes Misbeliefs

Literature review, advised by Prof. [Songfa Zhong \(HKUST\)](#)

2023/02 – Present

- A systematic review about existing works about superstition (misbeliefs) in Economics and Psychology
- Theories about superstition are illustrated in a Prior-Process-Posterior learning framework

Uncertainty as Incentives: A Theory of Karma

Capstone project, advised by Prof. [Charles Maxwell Becker \(Duke\)](#)

2022/09 – Present

- **Model in decision theory:** extended model to causal state space, analyzed a general karmic-belief-based utility model, and the model implies that immorality can be curtailed simply through a zero-expected-cost lottery.
- **Mechanism design:** applied the decision model to address Moral Hazard problems. The results highlighted that crafting contracts with uncertain compensation can enhance cooperation levels and decrease probability of hazards

Work Experience

Duke University

Research Assistant for [Pëllumb Reshidi \(Duke\)](#)

2023/06 – Present

- **Math Proof:** help proving theoretical results in a working paper
- **Literature review:** review about market design for information selling market, review about existing theories to explain collapsing boundaries in Learning theory

New York University

Research Assistant for Prof. [Runshan Fu \(NYU\)](#) and Prof. [Anindya Ghose \(NYU\)](#)

2023/05 – Present

- **Survey design:** design the survey in Qualtrics about information acquisition in Opaque products
- **Literature review:** review the literature about conditions that when loss aversion might be reversed
- **Code review:** check MATLAB code about structural model

New York University (Shanghai)

Research Assistant for [Julia Hur \(NYU\)](#) at Goals, Incentives, and Meritocracy Lab

2022/06 – Present

- **Coding:** experiment construction with Qualtrics, data scraping from baseball reference sites
- **Data analysis:** data check with Python pandas, data analysis using R and Python
- **Literature review:** review about relation between willingness to pay and perceived costs of green products, relation between environmental attitudes and emotions

Core Coursework

PhD-level courses

Economics

learning

Microeconomic Analysis I

Econometrics I

Business (PhD)

Behavioral Decision Theory

Master-level courses

Economics

Advanced Microeconomic Analysis

Exp Techniques in Economics

Statistics (Master)

Bayesian Statistical Modeling

Probabilistic Machine Learning

Undergrad-level courses

Economics

Game Theory, Industrial Organization

Theory, Mathematical Economics, Behavioral

Economics, Experimental Economics

Math and Statistics

Calculus I & II, Linear Algebra, Stochastic

Process, Ordinary Differential Equations

Psychology

Social Psychology

Behavioral Decision Making and Nudging

Skills

Coding: Python, Stata, R, SAS

Experiment: Qualtrics and o-Tree

Math: Maple