

Xinyuan Lyu

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RESEARCH INTEREST

Health, Education, Labor, Public Policy, AI and Deep Learning Methods in Economics

EDUCATION

Duke University, Durham, USA

M.S. in Economics and Computation

2024.08-present

GPA: 4.00/4.00

Core Curriculum: Econometrics (PhD) (A+), Introduction to Deep Learning (A+), Introduction to Real Analysis (A)

Peking University, Beijing, China

B.A. in Philosophy; B.A. in Economics (Dual Degree)

2020.09-2024.06

GPA: 3.83/4.00

Core Curriculum: Advanced Mathematics-Calculus (95), Probability and Statistics (97), Intermediate Microeconomics (93), Intermediate Macroeconomics (94), Econometrics (98), Applied Micro Econometrics (100), Applied Time-Series Analysis (95), Labor Economics (96), Monetary Economics (97)

University of California, Berkeley, Berkeley, USA

Summer School

2023.06-2023.08

GPA: 4.00/4.00

Core Curriculum: Linear Algebra and Differential Equations (A+), Game Theory (A+)

RESEARCH EXPERIENCE

Probabilistic Point Process Prediction With Generative Methods and RNN

Independent Research

2024.09-2024.12

– Designed a novel model framework combining point process prediction with Recurrent Neural Networks (RNNs) and probabilistic generative models, including Variational Autoencoders (VAEs) and Generative Adversarial Networks (GANs). Validated the approach on large-scale datasets, including Taxi trip data and Taobao user interaction data, achieving superior performance in event type prediction accuracy and event time prediction RMSE compared to prior models.

The Policy Evaluation of “Township Consolidation” and “County boundary adjustment” in China

Research Assistant, Project Supervisor: Assist. Prof. Xuan WANG

2023.09-2024.03

– Utilized national tax survey panel data and employed map API to obtain coordinate information in bulk from firms’ addresses. Matched the coordinates with administrative division base maps to ascertain the administrative divisions firms belonged to over the years. Building on this, further applied the DID method to research the impact of exogenous changes in governance areas, due to Township Consolidation and County Boundary Adjustment policy between 1997-2015, on the tax status of the firms in these regions affected.

Field Research and Field Experiment on Migrant Workers in Manufacturing Industry in Yangtze River Delta

Research Assistant, Project Supervisor: Assoc. Prof. Dandan ZHANG

2023.09-2023.11

– Investigated employment channels in the manufacturing sector, focusing on the role of labor intermediaries in the labor market and the quality of employment and life of migrant workers. Conducted direct interviews and some later analysis to identify factors contributing to the employment instability of these workers and potential solutions. Additionally, participated in formulating a research plan to examine the employment stability of manufacturing workers in China’s Yangtze River Delta, assisting in designing a RCT on the influence of social networks and colleague relationships on their labor market performance, and contributing to the formation of initial surveys and questionnaires.

Personal Development and Living Conditions of First-Generation Migrant Workers in Later Life

Research Assistant, Project Supervisor: Assoc. Prof. Dandan ZHANG

2023.07-2023.09

– Merged the China Health and Retirement Longitudinal Study database with city-level external databases to create a research sample to investigate the occupational, migration, and household registration histories of the first-generation migrant workers. Evaluated the effects of China’s household registration

policy changes in 2014 on migrant workers' migration patterns. And discovered the inequality in later-life conditions and the development opportunities of the next-generation between these workers and comparing groups using PSM and regression analysis. Presented the findings at the 2023 "Spatial Economics Seminar - Platform Economy and Big Data Special Topic" conference hosted by Shanghai Jiao Tong University and the China Development Research Institute.

The Impact of Family Health Shocks on Individuals' Labor Market Outcomes and Mental Health

Independent Research, Project Supervisor: Prof. Xiaoyan LEI 2023.03-2023.07

– Utilized the China Family Panel Studies data, and employed the staggered DID method to identify the effects of various health shocks from different family members on individuals' labor market performance and mental health level, and took various robustness checks to make the result convincing. Furthermore, conducted an exhaustive heterogeneity analysis, which validated with empirical results the great disparities in gender, age, urban-rural distinction, and job types in the labor market characters under unexpected shocks.

Health Conditions, Medical Utilization, and Their Determinants among Middle-aged and Elderly People in China

Independent Research, Project Supervisor: Prof. Yaohui ZHAO 2022.10-2023.02

– Focused on the impact of living arrangements on the medical and health benefits for the elderly, and the effect of widowhood on the health and cognitive functions for middle-aged and elder adults. Utilized four waves from China Health and Retirement Longitudinal Study to form a panel data and identified the influence of co-residing with children and the distance to the nearest child on the individuals' utilization of various levels of medical resources and their physical health, using the age difference with the youngest child as an instrumental variable. Additionally, employed the event study method to analyze the impact of widowhood on the mortality risk, physical and mental health, and cognitive functions of middle-aged and the elderly, which also included the uncovering of several heterogeneity of the effects across different groups and potential mechanisms.

WORK EXPERIENCE

China Unicom Digital Technology Co., Ltd, AI Innovation Center, Beijing, China

Internship 2024.06–2024.08

- Process pre-training data for LLM.
- Conduct safety evaluations and risk monitoring for LLM, and perform safety reviews on generated content.
- Fine-tune models for different application scenarios, and enhance model safety through fine-tuning.

CHARLS Survey Project Group, China Social Sciences Survey Center, PKU, Gansu, China
Leader of the Survey Team for Gansu Province, The fifth Wave of CHARLS 2022.07-2022.09

- Organized the entire journey and work of the survey team, successfully completing survey work six villages within Gansu province.
- Engaged in discussions with county-level and village-level government departments and researched their medical, elder care policies, and the status of related infrastructure development.
- Collaborated with county-level medical institutions to collect blood samples from the villagers, as well as conduct the health examination for villagers
- Communicated effectively with government departments at all levels and households, organizing the team to successfully conduct in-home questionnaire surveys for over one hundred households.

SKILLS

Programming: Stata, Python, R, L^AT_EX

Technical Skills: Causal Inference, Machine Learning, Deep Learning, GIS

Languages: Chinese (native), English (proficient)

HONORS AND AWARDS

China Economic Research Scholarship, First Class Award (2022-2023)

Society Talent Cultivation Scholarship, Peking University (2022-2023)

Outstanding Student International Exchange Scholarship (2022-2023)

Award for Social Work, Peking University (2022-2023)

Award for Academic Excellence, Peking University (2021-2022)

Award for Academic Excellence, Peking University (2020-2021)