

Xinyuan Lyu

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RESEARCH INTEREST

Labor and Health Economics, Data Science and Deep Learning Methods

EDUCATION

Duke University, Durham, USA

M.S. in Economics and Computation

2024.08-present

GPA: 4.00/4.00

Core Curriculum: Econometrics (PhD) (A+, Ranked 1st), Deep Learning (A+, Ranked 1st), Real Analysis (A), NLP, Advanced Deep Learning, Causality Data Analysis and Machine Learning, Structural Methods

Peking University, Beijing, China

B.A. in Economics; B.A. in Philosophy

2020.09-2024.06

GPA: 3.83/4.00

Core Curriculum: Calculus (A+), Probability and Statistics (A+), Intermediate Microeconomics (A), Intermediate Macroeconomics (A), Econometrics (A+), Applied Micro Econometrics (A+, Ranked 1st), Applied Time-Series Analysis (A+), Labor Economics (A+), Monetary Economics (A+), Finance (A+)

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 pilot 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

Data Science Internship, Beijing, China

2024.05–2024.08

- Collaborated with the Network Operations & Equipment Monitoring Center to gather relative records data from network devices for data science model development, then delivered validated insights for proactive network resource scheduling and maintenance.
- Participated in developing the sparse event prediction model using point process modeling to anticipate the time and type of equipment failures triggered by environmental or operational anomalies.
- Participated in leveraging virous machine learning and deep learning techniques (ConvLSTM, ST-ResNet) to form a spatiotemporal network load prediction system to accurately forecast network load across various regions and time periods, particularly during major events such as festivals.

CHARLS Survey Project Group, China Social Sciences Survey Center, PKU

Leader of the Survey Team, The fifth Wave of CHARLS, Gansu, China

2022.07-2022.09

- Directed and coordinated all survey operations, successfully completing fieldwork across six villages in Gansu and Shanxi provinces.
- Engaged with county and village officials to gather insights and information on local healthcare and eldercare policies, as well as infrastructure development.
- Collaborated with county-level medical institutions to facilitate blood sample collection and comprehensive health examinations of residents.
- Managed communication with government entities and households, ensuring the efficient administration of in-home surveys for over one hundred families.

SKILLS

Programming: Stata, Python, R, SQL and Spark (Currently Learning), \LaTeX

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

Languages: Chinese (native), English (proficient)

HONORS AND AWARDS

China Economic Research Scholarship, First Class Award (Top 3 at PKU) (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)