

# Xinyu Guo

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## EDUCATION

### **Sichuan University, West China Fourth Hospital**

Chengdu, China

*Master of Health Policy and Management* **GPA:**3.75/4.0, 88.88/100

09/2022 - 06/2025

**Core Courses:** Health Economics (97), Health Policy and Management(90), Research on Hospital Management (90)

### **Nanjing University of Traditional Chinese Medicine**

Nanjing, China

*Bachelor of E-Commerce* **GPA:** 3.62/4.0,

**Rank 1** out of 39

09/2018 - 06/2022

**Core Courses:** Linear Algebra (A), Network Marketing(A), Systems Engineering(A), Matlab and Management Decisions(A), Game Theory and Information Economics(A), SPSS Economic Statistical Analysis(A), Cloud Computing(A)

### **Cambridge University, Girton College**

Cambridge, UK

*International Organizations Program*

07/2023 - 08/2023

## WORKING EXPERIENCE

### **Hong Kong Polytechnic University Department of Applied Social Sciences**

Hong Kong SAR, China

*Project Assistant*

03/2024 - 07/2024

- Implemented RI-CLPM extended and LGCM models using R and Mplus software to analyze cohort data.
- Assisted in teaching workshops for the undergraduate course "Service Leadership through Serving Children and Families with Special Needs".

### **SurgeBot Technology Co., Ltd.**

Beijing, China

*Editor*

08/2022 - Present

- Contributed and reviewed articles on medical devices and policies for a industry media platform, growing the WeChat public account "Device Market" follower count from **0** to **13,864**.
- Collected and analyzed policy and market data on medical devices, authored content for a global surgical robot market analysis report, and assisted in organizing Global Medical Robotics Conference 2023, and 2024.

### **JD Health International Inc.**

Beijing, China

*Intern, Capability Enhancement Department*

02/2022 - 06/2022

- Managed the group's first internal "Spark Plan" innovation and entrepreneurship project, executing process design, publicity, solicitation, and selection of 36 projects for professional training, culminating in 2 investments.
- Assisted department leaders in analyzing and addressing key business challenges through targeted workshops.

### **The Science and Technology Park of Sichuan University**

Sichuan, China

*Intern*

09/2023 - Present

- Developed promotion and recruitment plans for the new interdisciplinary project incubation center.
- Coordinated with an 8-department team to build and test a full-service platform (website and WeChat mini-program) for transforming scientific and technological achievements, and applied for intellectual property rights (authorized).

## RESEARCH PROJECTS

### **Integrating Causality into Clinical Decision-Making for Enhanced ICU Mortality Prediction**

*Guided by Prof. Li Lu | College of Computer Science, SCU*

7/2024 - Present

- Developed a novel causal prediction model that enhances ICU mortality prediction by addressing the challenges of sparse and misaligned multivariate time series data.
- Demonstrated the model's adaptability and robustness in clinical settings by applying it to 2 real-world datasets,

outperforming 9 established benchmarks on public ICU data and achieving reliable performance in predicting acute illness scenarios.

### **Life changes and symptoms of depression and anxiety among Chinese children and adolescents before, during, and after the COVID-19 pandemic lockdown**

*Guided by Prof. Huan Song and Prof. Lihua Jiang | West China Hospital, SCU*

07/2021 - 06/2024

- Collected and analyzed survey data from 7,829 Chinese students (Grades 1–9) across three waves (Dec 2019 –Jul 2021) to assess the impact of the COVID-19 lockdown on mental health before, during, and after the lockdown.
- Applied logistic regression and clustering analysis to identify associations between students' life changes (study, social activities, family income) to increased depression and anxiety risks.

### **Academic Values, Anxiety, and Non-suicidal Self-Injury in Adolescents: A Longitudinal Study**

*Guided by Prof. Daniel T. L. Shek | Department of Applied Social Sciences, HKPU*

03/2024 - 09/2024

- Investigate the complex interactions among academic anxiety, intrinsic and utilitarian academic values, and non-suicidal self-injury (NSSI) behaviors in adolescents using three waves of longitudinal data (N = 4,143)
- Using an extended version of random intercept cross-lagged panel model (RI-CLPM), our analyses highlight changes in within-person and between-person dynamics over time.

### **Dynamic Causal Learning for Cognitive Impairment Prediction in Aging Adults**

*Guided by Prof. Li Lu | College of Computer Science, SCU*

07/2023 - 05/2024

- Developed a novel dynamic causal graph-based learning approach (utilizing Directed Acyclic Graphs (DAGs) derived from both GAE and CGNN, combined with the LSTM and the MLP), using the China Health and Retirement Longitudinal Study data (2011-2020, 28 provinces, n=3,660) to predict cognitive impairment in aged 45 and older individuals (AUROC=0.8787).
- Conducted multi-round experiments and sub-group analyses (gender, health, education) to validate model robustness, surpassing benchmark performance (AUC=0.81).

### **Chronic Disease Survey and Policy Report for Community Residents in Sichuan Province**

*Guided by Prof. Li Zhao and Prof. Lihua Jiang | West China School of Public Health, SCU*

03/2024 - 07/2024

- Participated as a co-leader in the chronic disease survey of community residents in Sichuan Province.
- Analyzed survey data and wrote policy recommendations for chronic disease management in 5 regions of the province.

### **Chinese General Social Survey (CGSS) 2023**

*Guided by Prof. Li Zhao | West China School of Public Health and West China Fourth Hospital, SCU*

08/2023

- Co-led the Sichuan survey team for the 2023 CGSS, focusing on the relationship between social structure and quality of life in urban and rural China.
- Conducted fieldwork, including questionnaires and interviews, in Wenjiang District of Chengdu, Luzhou, Leshan, Meishan, and Nanchong.

### **Chengdu Positive Child Development (CPCD) Survey**

*Guided by Prof. Li Zhao | West China School of Public Health and West China Fourth Hospital, SCU*

*Participant in 4th Wave, Leader in 5th Wave*

06/2022, 06/2023

- Organized and implemented the 5th wave of cohort data collection, including contacting schools, conducting field surveys, entering questionnaires using Epidata, preliminary data processing with SPSS, and compiling the codebook.
- Analyzed data from the first four waves using statistical software such as R, MLwin, and Mplus, contributing to data analysis and academic paper writing.

### **Service Leadership through Serving Children and Families with Special Needs**

*Guided by Prof. Xiang Li | Department of Applied Social Sciences, HKPU*

*Project Assistant (Participant in 2023, Co-Leader in 2024)*

09/2022 - 06/2023, 09/2023 - 06/2024

- Coordinated with Sichuan University, Hong Kong Polytechnic University, Huaxi Primary School, and Shude Middle

School for project preparation, logistics, and post-project summary.

- Observed the entire service process as a volunteer, evaluating service quality and providing feedback.

### **Data Mining of Traditional Chinese Medicine Prescriptions Based on Real-World Data**

*Guided by Prof. ShaoLiang Tang | School of Health Economics and Management, NJUCM* 01/2022 - 04/2022

- Conducted data mining of Traditional Chinese Medicine prescriptions related to perianal abscesses recorded in the electronic information system of Nanjing Traditional Chinese Medicine Hospital using R.
- Performed frequency analysis, complex network visualization, clustering analysis, and efficacy classification statistics.

### **Simulation Analysis of COVID-19 Related Network Rumor Propagation**

*Guided by Prof. ShaoLiang Tang | School of Health Economics and Management, NJUCM* 01/2021 - 05/2021

- Modified and applied the SIRS infectious disease model using system dynamics to simulate the ordinary differential equations governing the propagation of COVID-19-related network rumors.
- Conducted simulations with Vensim PLE to analyze the effects of expert interventions, opinion leader participation, rumor response speed, information transparency, and government influence on rumor propagation over time.

## **PUBLICATIONS**

**Guo, X.**, Wang, L., Li, Z., Feng, Z., Lu, L., Jiang, L., & Zhao, L. (2024). Factors and pathways of non-suicidal self-injury in children: insights from computational causal analysis. *Frontiers in Public Health*, 12, 1305746.

Wang, L., **Guo, X.**, Zhou, Y., Li, Z., Jiang, L., Zhao, L., ... & Lu, L. (2024). Dynamic Causal Graph-Based Learning Approach for Predicting Cognitive Impairment in Middle-Aged and Older Adults. In *Proceedings of the Annual Meeting of the Cognitive Science Society* (Vol. 46).

Zeng, Y., Song, J., Zhang, Y., **Guo, X.**, Xu, X., Fan, L., ... & Jiang, L. (2024). Life changes and symptoms of depression and anxiety among Chinese children and adolescents before, during, and after the COVID-19 pandemic lockdown: a combination of cross-sectional, longitudinal, and clustering studies. In *European Child & Adolescent Psychiatry* (1-14).

Wang, L., **Guo, X.**, Han, B., Lihua, J., Li, Z., ... & Lu L. (2024). CRISP: A Causal Relationships-Guided Deep Learning Framework for Advanced ICU Mortality Prediction. In *Artificial Intelligence In Medicine* (Under Review).

**Guo, X.**, Peng, Y., Li, X., Zhao, L., Jiang, L., & Shek, DTL. (2024). Academic Values, Academic Anxiety, and Non-Suicidal Self-Injury in Chinese Adolescents: A Three-Wave Longitudinal Study. (In the Process of Submitting)

## **ACTIVITIES & PRESENTATIONS**

**46th Annual Meeting of the Cognitive Science Society** Rotterdam, The Netherlands 07/24 - 07/27, 2024

Poster: A Causal Relationships-Guided Deep Learning Framework for Advanced ICU Mortality Prediction

**2023 China Conference on Children and Family development: Nurturing Young People in a Rapidly Changing World** Chengdu, China 12/16 - 12/18, 2023

Oral: Life Changes and Symptoms of Depression and Anxiety Among Chinese Children and Adolescents Before, During, and After the COVID-19 Pandemic Lockdown

**China's 4th Interdisciplinary Behavioral Health Conference** Nanjing, China 03/31 - 04/03, 2023

Poster: Predicting Adolescent Obesity in China Using Machine Learning Methods

**Deputy Director of the Graduate Student Chapter's Practice, Entrepreneurship and Employment Center, SCU** 10/2022 - 08/2023

**Representative for the 25th Student Congress, NJUCM** 12/2019 - 12/2020

**Director and Announcer of Evening Program, NJUCM Radio Station** 10/2018 - 12/2019

## **TEACHING EXPERIENCE**

<b>Graduate Compulsory Class on Public Health Master's Professional Foreign Language</b>	
Sichuan University	09/2024 - Present
<b>Undergraduate Optional Class on Service Leadership through Serving Children and Families with Special Needs</b>	
Hong Kong Polytechnic University	03/2024 - 07/2024
<b>Undergraduate Optional Class on Emergency Management of Public Health Incidents</b>	
Sichuan University	09/2023 - 01/2024
<b>Undergraduate Optional Class on Service Learning: Applied Health Management</b>	
Sichuan University	09/2023 - 01/2024
<b>Undergraduate Optional Class on Health Literacy</b>	
Sichuan University	03/2023 - 07/2023
<b>Undergraduate Practice Class on Innovation and Entrepreneurship Practice</b>	
Nanjing University of Chinese Medicine	03/2021 - 07/2021

## **HONOR & AWARD**

### **ACADEMIC:**

<b>President's Special Award, NJUCM</b>	<b>(Top 10 of one academic year)</b>	10/2020
<b>First-Class Scholarship, NJUCM</b>		
<b>(Top 3% for three consecutive academic years)</b>		2019-2020, 2020-2021, 2021-2022
<b>Outstanding Student Leader, NJUCM (Top 1%)</b>		2019-2020, 2020-2021
<b>Huatuo Scholarship, NJUCM (Top 5%)</b>		2020-2021
<b>Outstanding Graduate, NJUCM (Top 7%)</b>		2022
<b>Second-Class Graduate Scholarship, SCU (Top 20%)</b>		2022-2023, 2023-2024

### **SPORTS:**

<b>Jiangsu Provincial College Taekwondo Championships</b>	
<i>5th Place in Women's 59kg category</i>	11/2020
<b>China National College Taekwondo Championships</b>	
<i>5th Place in Women's 59kg category</i>	07/2021

### **ENTREPRENEURSHIP:**

<b>"Internet +" Entrepreneurship Competition, NJUCM</b>	
<i>Gold Award (Team Leader)</i>	11/2020
<b>11th Jiangsu Province "Challenge Cup" Entrepreneurship Competition</b>	
<i>Silver Award (Team Leader)</i>	11/2020
<b>China College Student Entrepreneurship Competition</b>	
<i>National Bronze Award (Team Leader)</i>	12/2020
<b>The 12th China College Students' "Innovation, Creativity, and Entrepreneurship" Challenge</b>	
<i>National Bronze Award (Team Member)</i>	09/2021

## **SKILLS & HOBBY**

<b>China Putonghua Proficiency Test, Level 2-A</b>	05/2021
<b>China National Social Sport Instructor</b>	10/2020
<b>China National Taekwondo Reference, Level Three</b>	08/2020
<b>International Taekwondo Black Belt, 1st Dan</b>	12/2013