# 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 Econimics (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".

**MedRobot**                                                                                                       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

**Graduate Compulsory Class on Public Health Master's Professional Foreign Language**

Sichuan University                                                                                                 09/2024 - Present

**Undergraduate Optional Class on Service Leadership through Serving Children and Families with Special Needs**

Hong Kong Polytechnic University                                                                          03/2024 - 07/2024

**Undergraduate Optional Class on Emergency Management of Public Health Incidents**

Sichuan University                                                                                                 09/2023 - 01/2024

**Undergraduate Optional Class on Service Learning: Applied Health Management**

Sichuan University                                                                                                 09/2023 - 01/2024

**Undergraduate Optional Class on Health Literacy**

Sichuan University                                                                                                 03/2023 - 07/2023

**Undergraduate Practice Class on Innovation and Entrepreneurship Practice**

Nanjing University of Chinese Medicine                                                              03/2021 - 07/2021


## HONOR & AWARD

ACADEMIC:

**President's Special Award, NJUCM**                   (**Top 10** of one academic year)                10/2020

**First-Class Scholarship, NJUCM**

(**Top 3%** for three consecutive academic years)                      2019-2020, 2020-2021, 2021-2022

**Outstanding Student Leader, NJUCM (Top 1%)**                          2019-2020, 2020-2021

**Huatuo Scholarship, NJUCM (Top 5%)**                                                      2020-2021

**Outstanding Graduate, NJUCM** (Top 7%)                                                         2022

**Second-Class Graduate Scholarship, SCU** (Top 20%)                          2022-2023, 2023-2024

SPORTS:

**Jiangsu Provincial College Taekwondo Championships**

*5th Place in Women's 59kg category*                                                               11/2020

**China National College Taekwondo Championships**

*5th Place in Women's 59kg category*                                                               07/2021

ENTREPRENEURSHIP:

**"Internet +" Entrepreneurship Competition, NJUCM**

*Gold Award (Team Leader)*                                                                            11/2020

**11th Jiangsu Province "Challenge Cup" Entrepreneurship Competition**

*Silver Award (Team Leader)*                                                                          11/2020

**China College Student Entrepreneurship Competition**

*National Bronze Award (Team Leader)*                                                           12/2020

**The 12th China College Students' "Innovation, Creativity, and Entrepreneurship" Challenge**

*National Bronze Award (Team Member)*                                                         09/2021


## SKILLS &HOBBY

**China Putonghua Proficiency Test, Level 2-A**                                                  05/2021

**China National Social Sport Instructor**                                                           10/2020

**China National Taekwondo Reference, Level Three**                                          08/2020

**International Taekwondo Black Belt, 1st Dan**                                                  12/2013