Likun Zhang

Beijing, China zhanglk6@ruc.edu.cn +86 13711012799

Research Interests

Adaptive design, causal inference, interaction analysis, precision medicine, semiparametric statistics

Education

Renmin University of China (RUC), Beijing, China — *Aug 2021 – Jun 2026 (expected)*
PhD in Statistics, Institute of Statistics and Big Data

- Advisor: Dr. Wei Ma

University of California, Berkeley (UCB), CA, United States — *Aug 2019 – Dec 2019*
Statistics Exchange Program

Sun Yat-sen University (SYSU), Guangdong, China — *Aug 2017 – Jun 2021*
B.S. in Statistics, School of Mathematics

- Advisor: Drs. Hui Huang, Xueqin Wang, Guang Yang
- GPA: 4.4/5.0 (Ranking: 1/79)
- 2018 National Scholarship for academic excellence and whole person development (Ranking: 1/231)

Publication and Revision

Zhang, L. **& Ma, W. (2025). Interaction Tests With Covariate-Adaptive Randomization. Statistical Analysis and Data Mining: The ASA Data Science Journal, 18(1), e70003;** — Jan 2025

- Corrected standard interaction tests to achieve nominal rejection levels under covariate-adaptive randomization
- Proposed stratified-adjusted interaction tests that are simple, powerful, and broadly applicable
- Encompassed both stratification covariates and additional covariates not used in randomization
- Guided valid and efficient interaction testing and subgroup analysis for practical randomized controlled trials

Zhang, L. **& Ma, W. (2025). Efficient Interaction Analysis in Randomized Controlled Trials. Biometrics (invited revision)** — Nov 2025

- Introduced a model-free framework for interaction analysis in randomized controlled trials
- Advocated a clearly defined target parameter for interaction analysis
- Computed semiparametric efficiency bound and proposed novel semiparametric efficient methods

Cui et al. (2025). Age-Related Variation and Associated Factors of Intrinsic Capacity Across Adulthood: Findings From the Nationwide PENG ZU Study in China. GeroScience (minor revision) — Jul 2025

- Cooperated with doctors from Beijing Institute of Geriatrics, Beijing Hospital
- Characterized age-related variation in intrinsic capacity (IC) and identified factors associated with IC

Working Paper

Zhang, L. **& Ma, W. (2025). Covariance-Driven Regression Trees: Reducing Overfitting in CART.** — Jan 2026

- Proposed a covariance-driven splitting criterion for regression trees (CovRT), which is more robust to overfitting than CART
- Established an oracle inequality for CovRT and proved that it attains the same high-dimensional consistency rate as CART
- Empirically demonstrated superior predictive performance of CovRT over CART in simulations and real-world tasks

Research Experience

Impact of Atmospheric Pollutants on Respiratory Diseases *Guangdong*
Southern China Center For Statistical Science, SYSU *Jan 2020 – Jun 2021*

- Cooperated with doctors from Xi'an Jiaotong University
- Investigated lagged effects of atmospheric pollutants on respiratory diseases

Quantitative Investment Research *Guangdong*
Southern China Center For Statistical Science, SYSU *Feb 2019 – Dec 2019*

- Simulated stock price prediction strategies

Teaching Experience

TA: Advanced Language Programming *Beijing*
Institute of Statistics and Big Data, RUC *Spring, Fall 2025*

TA: Computer Skills in Data Science *Beijing*
Institute of Statistics and Big Data, RUC *Fall 2023, 2024*

TA: Semiparametric Learning *Beijing*
Institute of Statistics and Big Data, RUC *Summer 2023, 2024*

Conference Talks

Interaction Analysis in Randomized Controlled Trials *Beijing*
Invited talk at *RUC Mathematics Time* *Apr 2025*

Interaction Tests With Covariate-Adaptive Randomization *Yunnan*
Contributed talk at *the 2nd Joint Conference on Statistics and Data Science in China (2024 JCSDS)* *Jul 2024*

Technologies

Languages: R, Python, C++, Java, C#, SQL, MATLAB