Jiachen Liu

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EDUCATION

Michigan State University
East Lansing, MI

Doctor of Philosophy in Measurement and Quantitative Methods (GPA: 3.9/4.0)   *Aug 2019 – expected Aug 2025*

- **Dissertation:** *Two-level Hurdle Model of the GPA Distribution with Two-side Truncated Generalized Poisson Distribution*(Committee: Yuehua Cui, Richard T. Houang, Haolei Weng, William H. Schmidt (Chair), Barbara L. Schneider)
- **Research Interest:** Generalized linear mixed models, instrumental variable, variable selection
- **Relevant Coursework:** Quantitative Methods in Educational Research I & II, Psychometric Theory I, Item Response Theory, SEM in Educational Measurement, Multivariate Data Analysis I & II

Michigan State University
East Lansing, MI

Master of Science in Statistics (GPA: 4.0/4.0)   *Aug 2022 – Dec 2023*

- **Advanced Coursework:** Linear Model Methodology, Mixed Models, Econometrics IA (audited) & IB, Cross Section and Panel Data (audited), Applied Econometrics, Statistical Learning and Data Mining

Beijing Normal University
Beijing, China

Bachelor of Science in Statistics (GPA: 85.67/100)   *Aug 2015 – May 2019*

- **Relevant Coursework:** Advanced Algebra I & II, Mathematical Analysis I & II & III, Probability Theory, Probability Measure, Mathematical Statistics, Linear Model, Applied Multivariate Statistical Analysis, Applied Stochastic Processes, Statistical Computing, Applied Time Sequence Analysis, Sampling Survey, Experimental Design, Introduction to Interactive Python Programming

ACADEMIC EXPERIENCE

Postdoctoral Research Associate
expected Aug 2025- Aug 2027

Department of Statistics, Purdue University   *West Lafayette, IN*

RESEARCH EXPERIENCE

Research Assistant
Sep 2019 – Present

Michigan State University   *East Lansing, MI*

- Proposed a tentative measure for OTL consistency and investigated methods for identifying valid instrumental variables (IV) for causal inference in large-scale datasets such as PISA and TIMSS
- Performed a re-examination of the growth mindset treatment effect using the hurdle model, and explored the contextual moderating effect of textbooks
- Conducted program evaluation for the College Art Access Program (CAAP) using analysis of covariance (ANCOVA), tested random assignment with support vector machine (SVM), and drafted the final report

Teaching Assistant
Sep 2023 – Dec 2023

Michigan State University   *East Lansing, MI*

- Taught introductory courses in general linear models (LM), generalized linear models (GLM), linear mixed models (LMM), and generalized linear mixed models (GLMM)
- Assisted in creating example datasets and analytical results for lecture slides

Undergraduate Research Assistant
June 2018 – May 2019

Beijing Normal University   *Beijing, China*

- Led an independent study exploring the geographic distribution of teacher salary within provinces and the potential impact of provincial multi-center structure on spatial equality of teacher salaries
- Participated in questionnaire revision and data collection of Chinese Teacher Profession Survey (CTPS), joined the field study of teacher salary and student schooling environment in rural areas of Fengning county, Hebei province

Working Papers

- Liu, J., Schmidt, W.H., Weng, H., Houang, R.T., Schneider, B. L., Cui, Y. (in preparation). A Review of Distributional Assumptions for Modeling Student GPA

- Schmidt, W.H., Liu, J., Wang, X., Houang, R.T., Yeager, D.S. (in preparation). Textbooks in Perpetuating Growth Mindset Effect

- Liu, J., Cui, Y., Weng, H., Schmidt, W.H. (in preparation). Valid Instrumental Variable Selection Using Lasso under the Control Function Approach

- Liu, J., Schmidt, W.H., Yeager, D.S. (in preparation). Modeling the GPA Distribution: A Re-examination of the Growth Mindset Experiment Effect on Student Mathematics Achievement

- Liu, J., Schmidt, W.H., Coffey, P., Gorini, N., Cogan, L.S. (in preparation). Improving Opportunities for Underprivileged Urban-City High School Students through Enhancing their Art Experiences: Research Evidence from College Arts Access Program

Conference Presentations

- Liu, J., Schmidt, W.H., Houang, R.T. (2025). *A Review of Modeling Distributions for Student GPA.* Roundtable session to be presented at the annual meeting of the 2025 Joint Statistical Meetings. Nashville, TN; August.

- Liu, J., Cui, Y., Weng, H., Schmidt, W.H. (2025). *Valid Instrumental Variable Selection Using Lasso under the Control Function Approach.* Paper session to be presented at the 2025 Joint Statistical Meetings. Nashville, TN; August.

- Schmidt, W.H., Liu, J., Wang, X., Houang, R.T., Yeager, D.S. (2025). *Textbooks in Perpetuating Growth Mindset Effect.* Virtual paper session presented at the 2025 annual meeting of the American Educational Research Association. Denver, CO; April.

- Liu, J., Schmidt, W.H., Yeager, D.S. (2025). *Re-examining the Growth Mindset Treatment Effect: An Illustration of Why Distributional Assumption Matters.* Paper session presented at the 2025 annual meeting of the American Educational Research Association. Denver, CO; April.

- Liu, J., Schmidt, W.H., Houang, R.T. (2025). *OTL Consistency Reconceptualized and Why There Might Be No Curriculum for All.* Roundtable session presented at the 2025 annual meeting of the American Educational Research Association. Denver, CO; April.

- Liu, J. (2024). *Modeling the GPA Distribution.* Concurrent session presented at the annual meeting of the 2024 ASA Conference on Statistical Practice. New Orleans, LA; February.

- Liu, J. (2023). *Prior Achievement, Future Learning Opportunities and Student Achievement.* Poster presented at the annual meeting of the Modern Modeling Methodology. Storrs, CT; June.

- Liu, J. (2022). *Prior Achievement, Future Learning Opportunities and Student Achievement.* Poster presented at the annual meeting of the American Educational Finance and Policy. Denver, CO; March.

Awards & Honors

CEPSE Department Travel Fellowship 2024, 2025

Graduate School Travel Fellowship

Dissertation Research Fellowship 2024

Summer Research Fellowship 2022

Erickson Research Fellowship 2019-2024

Merit Student Award of Beijing

Merit Student Award of Beijing Normal University

First-Class Competition Scholarship, twice

Jingshi Third-Class Scholarship, twice

Scholarship on Social Work

Professional Membership

American Educational Research Association

American Statistical Association

Association for Education Finance and Policy

Society for Research on Educational Effectiveness

Technical Skills

Languages: R studio, Stata, Python, SAS, Mplus, Tableau, SPSS
Certification: Certified Associate in Python Programming (Python Institute, June 2021), Tableau Desktop Specialist (Tableau, Sep 2020)

References

Dr. Yuehua Cui cuiy@msu.edu 5174327098

Dr. Richard T. Houang houang@msu.edu 5178622393

Dr. William H. Schmidt (Co-Chair) bschmidt@msu.edu 5178985443

Dr. Barbara L. Schneider (Co-Chair) bschneid@msu.edu 8476092103

Dr. Haolei Weng wenghaol@msu.edu 9177559131