

# Susu Zhang, Ph.D.

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Departments of Psychology and Statistics  
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## EDUCATION

*University of Illinois Urbana-Champaign, Champaign, IL* August 2018  
Ph.D. in Quantitative Psychology

*University of Illinois Urbana-Champaign, Champaign, IL* December 2017  
M.S. in Quantitative Psychology

*University of Illinois Urbana-Champaign, Champaign, IL* May 2017  
M.S. in Applied Mathematics: Optimization and Algorithms

*Bryn Mawr College, Bryn Mawr, PA* May 2014  
B.A.: Psychology and Mathematics

## EMPLOYMENT

**University of Illinois Urbana-Champaign**  
*Assistant Professor, Psychology and Statistics* August 2020 - Present  
*Faculty Affiliate, School of Information Sciences* June 2021 - Present  
*Lincoln Excellence for Assistant Professors (LEAP) Scholar, College of LAS* 2024 - 2026

**Columbia University**  
*Postdoctoral Research Scientist, Department of Statistics* July 2018 - June 2020

**ACT Inc.**  
*Psychometric Intern* June 2016 - August 2016

## TEACHING

**University of Illinois Urbana-Champaign**  
*Instructor*  
**Courses:**

- PSYC 490: Measurement and Test Development Lab Fall 2020, 2022, 2023
- STAT/CSE 428: Statistical Computing Spring 2021, 2022, 2024
- PSYC 593: Seminar: Statistical Learning for Behavioral Data Spring 2023

*Lab Instructor and Teaching Assistant*  
**Courses:**

- PSYC 490: Measurement and Test Development Lab Fall 2015
- PSYC 301: Statistical Methods for Psychology Spring 2016, 2017

**Bryn Mawr College**  
*Undergraduate Teaching Assistant*

## Courses:

- PSYC 105: Introductory Psychology Fall 2013
- PSYC 205: Experimental Methods and Statistics Spring 2013, 2014

## AWARDED GRANTS

### IES R324P210005

Analysis of NAEP Mathematics Process, Outcome, and Survey Data to Understand Test-Taking Behavior and Mathematics Performance of Learners with Disabilities (Co-PI; 2021 - 2024; \$699,807)

### AERA NSF Small Research Grant

Revision and Review Behavior in Large-Scale Computer-Based Assessments: An Analysis of NAEP Mathematics Process Data (PI; 2023 - 2025; \$35,000)

## PUBLICATIONS

\*: Corresponding author; †: Student; ‡: Equal contribution

### Accepted:

1. Du, Y.<sup>†</sup>, **Zhang, S.** (2024). Detecting compromised items with response times using a Bayesian change-point approach. *Journal of Educational and Behavioral Statistics*.
2. Kwon, S.<sup>†</sup>, **Zhang, S.\***, Koehn, H. F., & Zhang, B. (2024). MCMC Stopping Rules in Latent Variable Modeling. *British Journal of Mathematical and Statistical Society*.
3. **Zhang, S.**, Tang, X., He, Q., Liu, J., and Ying, Z. (2024). External Correlates of Adult Digital Problem-Solving Behavior: Log Data Analysis of a Large-Scale Assessment. *Zeitschrift für Psychologie*.
4. Xu, X., Fang, G., Guo, J., Ying, Z., & **Zhang, S.\*** (2024). Diagnostic Classification Models for Testlets: Methods and Theory. *Psychometrika*.
5. Zheng, Y.<sup>‡</sup>, Nydick, S.<sup>‡</sup>, Huang, S.<sup>‡</sup>, & **Zhang, S.<sup>‡</sup>** (2024). MxML (Exploring the relationship between measurement and machine learning in the history, current time, and future): Current state of the field. *Educational Measurement: Issues and Practice*.
6. Xu, X.<sup>‡</sup>, **Zhang, S.<sup>‡</sup>**, Guo, J., & Tao, X. (2024). Biclustering of Log Data: Insights from a Computer-based Complex Problem Solving Assessment. *Journal of Intelligence*.
7. Ulitzsch, E., **Zhang, S.**, & Pohl, S. (2024). A Model-Based Approach to the Disentanglement and Differential Treatment of Engaged and Disengaged Item Omissions. *Multivariate Behavioral Research*.
8. Wei, X., **Zhang, S.**, & Zhang, J. (2024). Identifying Student Profiles in a Digital Mental Rotation Task: Insights from the 2017 NAEP Math Assessment. *Frontiers in Education: STEM Education*.
9. Hubert, L., **Zhang, S.** (2024). Whence Principal Components? *Book chapter on Analysis of Categorical Data from Historical Perspectives Essays in Honour of Shizuhiko Nishisato*.
10. **Zhang, S.**, Li, A.<sup>†</sup>, & Wang, S. (2023). Exploration of Latent Structure in Test Review and Revision Log Data. *Educational Measurement: Issues and Practice*.
11. Xiao, Z.<sup>‡</sup>, **Zhang, S.<sup>‡</sup>**, Liao, V., & Lai, V. (2023). Evaluating NLG Evaluation Metrics: A Measurement Theory Perspective. *Proceedings of the 2023 Conference on Empirical Methods in Natural Language Processing*.
12. Wei, X., & **Zhang, S.** (2023). Extended Time Accommodation and the Academic, Behavioral, and Psychological Outcomes of Students With Learning Disabilities. *Journal of Learning Disabilities*.
13. Wei, X., **Zhang, S.**, Yu, J., & Zhang, J.<sup>†</sup>. (2023). Mathematics Performance, Response Time, and Enjoyment of Eighth-Grade Students with Autism Spectrum Disorder and Their General Education Peers. *Autism*.

14. Zhang, B., Tu, N., Angrave, L, **Zhang, S.**, Sun, T., & Li, J. (2023). The Generalized Thurstonian Unfolding Model (GTUM): A Flexible Item Response Theory Model for Forced-Choice Measurement. *Organizational Research Methods*.
15. Zhang, B., Luo, J., **Zhang, S.**, Sun, T, & Zhang, D. (2023). Improving the statistical performance of oblique bifactor measurement and predictive models: An augmentation approach. *Structural Equation Modeling: A Multidisciplinary Journal*.
16. **Zhang, S.**, Wang, Z., Qi, J., Liu, J., & Ying, Z. (2022). Accurate Assessment via Process Data. *Psychometrika*.
17. **Zhang, S.**, Liu, J., & Ying, Z. Statistical Applications to Cognitive Diagnostic Testing. (2022). *Annual Review of Statistics and its Applications*.
18. Du, Y.<sup>†</sup>, **Zhang, S.**, & Chang, H.-H. (2022) Compromised item detection: A Bayesian change-point perspective. *British Journal of Mathematical and Statistical Psychology*.
19. **Zhang, S.**, Bergner, Y., DiTrapani, J., & Jeon, M. (2021). Modeling the Interaction between Resilience and Ability in Assessments with Allowances for Multiple Attempts. *Computers in Human Behavior*.
20. Guo, J.<sup>†</sup>, Xu, X.<sup>†</sup>, Ying, Z., & **Zhang, S.\*** (2021). Modeling Not-Reached Items in Timed Tests: A Response Time Censoring Approach. *Psychometrika*.
21. Fu, Z., **Zhang, S.\***, Su, Y., Tao, J., & Shi, N. (2021). A Gibbs Sampler for the Four-Parameter Logistic Item Response Model via a Data Augmentation Scheme. *British Journal of Mathematical and Statistical Psychology*.
22. Tang, X., **Zhang, S.**, Wang, Z., Liu, J., & Ying, Z. (2021). ProcData: An R Package for Process Data Analysis. *Psychometrika*.
23. Chang, H.-H.<sup>‡</sup>, Wang, C.<sup>‡</sup>, & **Zhang, S.<sup>‡</sup>** (2020). Statistical Applications in Educational Measurement. *Annual Review of Statistics and Its Application*.
24. Fang, G., Guo, J.<sup>†</sup>, Xin, X.<sup>†</sup>, Ying, Z., & **Zhang, S.\*** (2020). Identifiability of Bifactor Models. *Statistica Sinica*.
25. Rescorla, L., Jordan, P., **Zhang, S.**, Baelen-King, G., Althoff, R., Ivanova, M., & International ASEBA Consortium. (2020). Latent Class Analysis of the CBCL Dysregulation Profile for 6- to 16-Year-Olds in 29 Societies. *Journal of Clinical Child and Adolescent Psychology*.
26. Wang, S., **Zhang, S.**, & Shen, Y. (2019). A Joint Modeling Framework of Responses and Response Times to Track Skill Acquisition and Fluency. *Multivariate Behavioral Research*.
27. **Zhang, S.**, & Chang, H-H. (2019). A Multilevel Logistic Hidden Markov Model for Learning under Cognitive Diagnosis. *Behavior Research Methods*.
28. **Zhang, S.**, & Wang, S. (2018). Modelling Learner Heterogeneity: A Mixture Learning Model with Responses and Response Times. *Frontiers in Psychology, section Quantitative Psychology and Measurement*.
29. **Zhang, S.**, Douglas, J. A., Wang, S., & Culpepper, S. A. Reduced-Reparameterized Unified Model Applied to Learning Spatial Reasoning Skills. In von Davier, M., & Lee, Y.-S. (2018). *Handbook of Diagnostic Classification Models*.
30. Wang, S., **Zhang, S.**, Douglas, J. A., & Culpepper, S. A. (2018). Using Response Times to Assess Learning Progress: A Joint Model for Responses and Response Times. *Measurement: Interdisciplinary Research and Perspectives*.
31. **Zhang, S.**, Chang, H-H. (2017). From Smart Testing to Smart Learning: How Testing Technology Can Assist the New Generation of Education. *International Journal of Smart Technology and Learning*.
32. Kang, H-A., **Zhang, S.**, & Chang, H-H. (2017). Dual-Objective Item Selection Criteria in Cognitive Diagnostic Computerized Adaptive Testing. *Journal of Educational Measurement*.

## PRESENTATIONS

### Invited Talks:

#### External:

1. **Zhang, S.** (2024, November). What We are Learning from NAEP Process Data — Methodological Advancements in Process Data Analysis for Special Education Research. *Invited webinar presentation at the Institute of Education Sciences Lunch & Learn Series.*
2. **Zhang, S.** (2024, October). Informing Educational Measurement with Test-Taking Process Data. *Invited seminar presentation at the New York University PRIISM Center.*
3. **Zhang, S.** (2024, October). Informing Educational Measurement with Test-Taking Process Data. *Invited seminar presentation at the Joint Quantitative Brownbag (<https://jqbb.github.io/>).*
4. **Zhang, S.** (2024, September). Informing Educational Measurement with Test-Taking Process Data. *Invited presentation at the Purdue Statistics Department Seminar. West Lafayette, IN.*
5. **Zhang, S.** (2024, April). Revision and Review Behavior in Large-Scale Computer-Based Assessments: An Analysis of NAEP Mathematics Process Data. *Invited poster presentation at the 2024 American Educational Research Association (Excellence in Education Research: Early Career Scholars and Their Work), Philadelphia, PA.*
6. **Zhang, S.** (2024, April). Evaluating Natural Language Generation Model Evaluation: A Measurement Theory Perspective. *Invited presentation at the 2024 American Educational Research Association (Cognition and Assessment SIG), Philadelphia, PA.*
7. **Zhang, S.** (2024, March). Exploring the NAEP Math Achievement Gap: Insights from Test-Taking Process Data. *Invited Talk at Purdue University, College of Education. West Lafayette, IN.*
8. **Zhang, S.** (2024, March). Evaluating Natural Language Generation (NLG) Evaluations: A Measurement Theory Perspective. *Guest Lecture at the University of Notre Dame Measurement, Machine Learning, and Fairness course.*
9. **Zhang, S.** (2023, September). Evaluating Natural Language Generation (NLG) Evaluations: A Measurement Theory Perspective. *Invited Talk at the Columbia University Psychometrics Workshop. New York, NY.*
10. **Zhang, S.** (2023, June). Consequences of Data Leakage on Reproducibility in Machine-Learning-based Psychometric Research. *Invited symposium presentation at the International Chinese Statistical Association 2023 Applied Statistics Symposium. Ann Arbor, MI.*
11. **Zhang, S.** (2022, August). Exploration of Latent Structure in Test Review and Revision Log Data. *Invited Talk at the Educational Testing Service Process Data Special Interest Group Seminar. Online.*
12. **Zhang, S.** (2021, November). Identifying Problem-Solving Patterns via Clustering of Problem-Solving Log Data. *Invited Talk at the Classification Society 2021 Annual Meeting, Lewisburg, PA.*
13. **Zhang, S.,** Wang, Z., Qi, J., Liu, J., & Ying, Z. (2021, June). Accurate Assessment via Process Data. (2021). *Invited Talk at the Young Scholar Symposium of the Chinese Society of Education.*
14. **Zhang, S.,** Wang, Z., Qi, J., Liu, J., & Ying, Z. (2020, December). Accurate Assessment via Process Data. *Invited Seminar Talk at the School of Mathematics and Statistics, Northeast Normal University, Jilin Province, China.*
15. **Zhang, S.,** Tang, X., Liu, J., Ying, Z., & He, Q. (2020, July). Uncovering Cross-Situational Behavioral Consistency with Canonical Correlation Analysis of Log Data. *Spotlight Talk at the 85th International Meeting of the Psychometric Society.*
16. **Zhang, S.,** Lin, H., Gao, X., Chang, H-H. (2017, June). Real-Time Assessment of Learning Progress Using Cognitive Diagnostic-Computerized Adaptive Testing. *ACTNext Invited Symposium Series, Iowa City, IA.*

#### UIUC:

1. **Zhang, S.** (2024, March) *Quantitative Psychology Brownbag*.
2. **Zhang, S.** (2024, February) *Developmental Psychology Brownbag*.
3. **Zhang, S.** (2022, October) *Social/Personality/Organizational Psychology Brownbag*.
4. **Zhang, S.** (2022, September) *Statistics Seminar*.
5. **Zhang, S.** (2021, October). *Clinical/Community Psychology Brownbag*.
6. **Zhang, S.** (2021, October). *Cognitive Psychology Brownbag*.
7. **Zhang, S.** (2020, November). *Quantitative Psychology Brownbag*.
8. **Zhang, S.** (2020, October). *QUERIES Brownbag, College of Education*.

#### Training Sessions:

1. Liu, J., Qi, J., Kang, K., **Zhang, S.**, Tang, X., & Ying, Z. (2022, April) Short Course of R Programming for Data Science. <http://scientificpc.com/processdata/workshop2022RCourse.html>
2. He, Q., Liu, J, Tang, X., & **Zhang, S.** (2021, July). Statistical Learning Methods for Process Data *The 86th International Meeting of the Psychometric Society*.
3. Liu, J, Tang, X., & **Zhang, S.** (2021, June). Statistical Learning of Process Data: Methods, Software, and Applications. *Annual Meeting of the National Council on Measurement in Education*.
4. Liu, J., Tang, X., & **Zhang, S.** (2020, July). Workshop on Statistical Learning for Process Data. <http://www.scientificpc.com/processdata/workshop.html>
5. Douglas, J., Culpepper, S., Chen, Y., Balamuta, J., Chang, H-H., Wang, S., **Zhang, S.**, Fellouris, G., & Ye, S. (2018, April). Techniques and Software for Q-Matrix Estimation and Modeling Learning in Cognitive Diagnosis. *2018 National Council on Measurement in Education meeting*. New York, NY.
6. **Zhang, S.**, Chang, H-H. (2017, December). Stationary and Real-Time Assessment of Learning Progress with Diagnostic Classification Models. *2017 Global Chinese Conference on Educational Information and Assessment*, Taichung, Taiwan.

#### Leading Conference Presentations:

1. **Zhang, S.**, Tang, X. (2024, April). Diagnostic Assessment via Process Data based on Subtask Analysis. *Symposium presentation at the 2024 Annual Meeting of the National Council on Measurement in Education. Philadelphia, PA*.
2. **Zhang, S.** (2023, July). Consequences of Data Leakage on Reproducibility in Machine-Learning-based Psychometric Research. *Poster presented at the International Meeting of the Psychometric Society, College Park, MD*.
3. **Zhang, S.**, Wei, X. (2023, April). Explaining Performance Gaps with Problem-Solving Process Data via Exploratory Mediation Analysis. *Paper presented at the Annual Meeting of the National Council on Measurement in Education, Chicago, IL*.
4. **Zhang, S.**, Wei, X. (2023, April). Math Test-taking Behavior of Students with Learning Disabilities: A Natural Language Processing Approach *Paper presented at the Annual Meeting of the American Educational Research Association, Chicago, IL*.
5. **Zhang, S.**, Li, A.<sup>†</sup>, & Wang, S. (2022, August). Exploration of Latent Structure in Test Review and Revision Log Data. *Paper presented at the 2022 Joint Statistical Meeting. Washington DC*.
6. **Zhang, S.**, Wei, X., & Zhang, J.<sup>†</sup>. (2022, January). Examining the Differences in Item Revisit Patterns across Disability Groups. *Symposium Presentation at the FY2022 IES Annual Principal Investigators Meeting*.
7. **Zhang, S.**, Wang, Z., Qi, J., Liu, J., & Ying, Z. (2021, June). Improving Scoring Precision with Features Extracted from Log Data. *Symposium at the Annual Meeting of the National Council on Measurement in Education*.

8. **Zhang, S.**, Tang, X., Wang, Z., Liu, J., Ying, Z., & He, Q. (2019, July). Understanding Respondent Characteristics through Log Data and Interevent Times. *Paper presented at the 83rd International Meeting of the Psychometric Society*. Santiago, Chile.
9. **Zhang, S.**, Tang, X., Wang, Z., Liu, J., Ying, Z., & He, Q. (2019, June). Understanding Interactive Items' Characteristics by Deep Learning-based Process Data Analysis. *Paper presented at the 2019 International Association of Computerized Adaptive Testing Conference*. Minneapolis, Minnesota.
10. **Zhang, S.**, & Wang, S. (2019, April). Understanding Learner Heterogeneity: A Mixture Learning Model with Responses and Response Times. *Electronic poster presented at the 2019 National Council on Measurement in Education meeting*. Toronto, Canada.
11. **Zhang, S.**, & Wang, S. (2018, July). Modeling Heterogeneity in Online Learners: A Mixture Learning Model with Responses and Response Times. *Paper presented at the 83rd International Meeting of the Psychometric Society*. New York, NY.
12. **Zhang, S.**, & Chang, H-H. (2018, April). A Multilevel Logistic Hidden Markov Model for Learning under Cognitive Diagnosis. *Paper presented at the 2018 National Council on Measurement in Education meeting*. New York, NY.
13. **Zhang, S.**, & Chang, H-H. (2017, July). A Multilevel Logistic Hidden Markov Model for Learning under Cognitive Diagnosis. *Paper presented at the 82nd International Meeting of the Psychometric Society*. Zurich, Switzerland.
14. **Zhang, S.**, Lin, H., Gao, X., & Chang, H-H. (2017, April). Measuring Adaptive Learning Progress Using Cognitive Diagnostic-Computerized Adaptive Testing. *Paper presented at the 2017 National Council on Measurement in Education meeting*. Austin, TX.
15. **Zhang, S.**, & Culpepper, S. A. (2017, April). Bayesian Estimation of a General Class of Restricted Latent Class Models. *Paper presented at the 2017 National Council on Measurement in Education meeting*. Austin, TX.
16. **Zhang, S.**, & Chang, H-H. (2016, April). The Relationship between Q-Matrix Specification and Item Exposure Rate in CD-CAT. *Paper presented at the 2016 National Council on Measurement in Education meeting*, Washington, D.C.
17. **Zhang, S.**, & Chang, H-H. (2015, July). Using Computerized Adaptive Testing under the DINO Model for Psychological Testing: A Simulation Study. *Paper presented at the 80th International Meeting of the Psychometric Society*, Beijing, China.
18. **Zhang, S.**, Chang, H-H. (2015, July). Using Computerized Adaptive Testing under the DINO Model for Psychological Testing: A Simulation Study. *Psychometrics in the Big Data Era Workshop at Beijing Normal University*, Beijing, China.

#### Contributed Conference Presentations:

1. Kwon, S. & **Zhang, S.** (2024, July). Explaining performance gaps with problem-solving process data via Latent Class Mediation Analysis. *Paper presentation at the 2024 International Meeting of the Psychometric Society*, Prague, Czech Republic.
2. Domingue, B., Kanopka, K., Braginsky, M., Zhang, L., Caffrey-Maffei, L., Kapoor, R., Liu, Y., **Zhang, S.**, & Frank, M. (2024, July) The Item Response Warehouse (IRW). *Paper presentation at the 2024 International Meeting of the Psychometric Society*, Prague, Czech Republic.
3. Domingue, B., Kanopka, K., Caffrey-Maffei, L., Kapoor, R., **Zhang, S.**, Liu, Y. The Item Response Warehouse (IRW): A Large Open Repository of Response Data. *Paper presentation at the 2024 Annual Meeting of the National Council on Measurement in Education*. Philadelphia, PA.
4. Zheng, Y., Huang, S., Nydick, S., & **Zhang, S.** (2024, April). MxML Phase 2: Survey of the measurement community. *Paper presentation at the 2024 Annual Meeting of the National Council on Measurement in Education*. Philadelphia, PA.

5. Xiao, Z.<sup>†</sup>, **Zhang, S.**,<sup>‡</sup> Liao, V., & Lai, V. (2023, December). Evaluating NLG Evaluation Metrics: A Measurement Theory Perspective. *Empirical Methods in Natural Language Processing Conference*. Singapore.
6. Kwon, S.<sup>†</sup>, **Zhang, S.** (2023, November). Explaining Performance Gaps with Problem-Solving Process Data via Latent Class Mediation Analysis. *Presentation at the 2023 Ideas in Testing Research Seminar*, Chicago, IL.
7. Chen, L., **Zhang, S.**, Qi, J., & Liu, J. (2023, July). Understanding Differential Item Functioning Using Process Data. *Paper presented at the International Meeting of the Psychometric Society, College Park, MD*.
8. Kwon, S.<sup>†</sup>, **Zhang, S.**, & Koehn, H. F. (2023, April). MCMC Convergence Diagnostics in the DINA Model and the Bi-factor IRT Model. *Paper presented at the Annual Meeting of the National Council on Measurement in Education*, Chicago, IL.
9. Wei, X., **Zhang, S.** (2023, April). The Academic, Behavioral, and Psychological Impact of Extended Time Accommodation Among Students with Learning Disabilities. *Paper presented at the Annual Meeting of the American Educational Research Association*, Chicago, IL.
10. Ulitzsch, E., **Zhang, S.**, & Pohl, S. (2023, April) A Model-Based Approach to the Disentanglement and Differential Treatment of Engaged and Disengaged Item Omissions. *Paper presented at the Annual Meeting of the American Educational Research Association*, Chicago, IL.
11. Wei, X., **Zhang, S.**, & Zhang, J. (2023, April). Use NAEP Process Data to Profile Cognitive Strategies for Solving Spatial Problems. *Paper presented at the Annual Meeting of the National Council on Measurement in Education*, Chicago, IL.
12. Zheng, Y., Nydick, S., Huang, S., & **Zhang, S.** (2023, April). MxML: Exploring the relationship between measurement and machine learning in recent history. *Paper presented at the Annual Meeting of the National Council on Measurement in Education*, Chicago, IL.
13. Li, A.<sup>†</sup>, **Zhang, S.**, & Wang, S. (2022, April). Exploring Item-Level Revision Behaviors by Revision Log Clustering. *Annual meeting of the National Council on Measurement in Education*. San Diego, CA.
14. Wei, X., Zhang, J.<sup>†</sup>, & **Zhang, S.** (2022, April). A Tale of Two Disabilities: Findings from NAEP Response and Process Data. *Annual meeting of the National Council on Measurement in Education*. San Diego, CA.
15. Du, Y.<sup>†</sup>, **Zhang, S.**, Chang, H.-H. (2022, April). Compromised Item Detection: A Bayesian Change-Point Perspective. *Annual meeting of the National Council on Measurement in Education*. San Diego, CA.
16. Bergner, Y., **Zhang, S.**, Jeon, M., & DiTrapani, J. (2022, April). Making construct-irrelevant variance relevant: the case of resilience and other possibilities. *Annual meeting of the National Council on Measurement in Education*. San Diego, CA.
17. Qi, J.<sup>†</sup>, **Zhang, S.**, Liu, J., & Ying, Z. (2020, July). Differential Item Functioning Detection and Removal by Process Features and Transfer Learning. *Paper presented at the 85th International Meeting of the Psychometric Society*.
18. Guo, J.<sup>†</sup>, **Zhang, S.**, Xu, X.<sup>†</sup>, & Ying, Z. (2020, July). Modelling Not-Reached Items with Response Time Censoring Approach. *Paper presented at the 85th International Meeting of the Psychometric Society*.
19. Xu, X.<sup>†</sup>, **Zhang, S.**, Guo, J.<sup>†</sup>, Fang, G., & Ying, Z. (2020, July). Latent Variable Selection for Testlet-Based Tests *Paper presented at the 85th International Meeting of the Psychometric Society*.
20. Tang, X., **Zhang, S.**, Wang, Z., Liu, J., & Ying, Z. (2019, July). Cross-Item Response Process Prediction by Transformer. *Paper presented at the 84th International Meeting of the Psychometric Society*. Santiago, Chile.

21. Wang, S., & **Zhang, S.** (2019, April). Measuring Learning Outcome Using Responses and Response Times: Mastery and Fluency. *Paper presented at the annual meeting of the National Council on Measurement in Education*, Toronto, Canada.
22. Wang, S., **Zhang, S.**, Douglas, J., & Culpepper, S. (2018, July). A Joint Modeling Framework Using Responses and Response Times to Track Skill Acquisition: Model Estimation and Application. *Paper presented at the 2018 Joint Statistical Meeting*, Vancouver, Canada.
23. Chang, H-H., Wang, S., & **Zhang, S.** (2017, July). Some Promising Advancements Concerning CAT Foundation and Implementations. *Paper presented at the 81st International Meeting of the Psychometric Society*, Zurich, Switzerland.
24. Chang, H-H., Kang, H-A., & **Zhang, S.** (2017, April). Using Cognitive Diagnostic Computerized Adaptive Testing to Help Classroom Learning. *Paper presented at the annual meeting of the National Council on Measurement in Education*, San Antonio, TX.
25. Chang, H-H., **Zhang, S.** (2016, December). Psychometrics in the Era of “Internet + Education”. *2nd Annual Conference of the Collaborative Innovation Center of Assessment toward Basic Education Quality*, Beijing, China.
26. Kern, J. L., **Zhang, S.**, Sun, T., Zhang, B., Amrhein, R., Deceanne, A., & Lee, A. (2016, October). Multidimensional Computerized Adaptive Test for the Big Five Personality Assessment. *Paper presented at the annual Ideas in Testing Research Seminar*, Chicago, IL.
27. Chang, H-H., **Zhang, S.** (2016, September). Cognitive Diagnosis and “Internet + Measurement and Evaluations”. *Fourth Conference on the Statistical Methods in Psychometrics at Columbia University*, New York, NY.
28. Kang, H-A., **Zhang, S.**, & Chang, H-H. (2015, April). Jensen-Shannon Information as a Dual Objective Item Selection Criterion in CD-CAT. *Paper presented at the annual meeting of the American Educational Research Association*, Chicago, IL.

## SOFTWARE

The **hmcDM** R package

Creator

- A package for fitting hidden Markov cognitive diagnosis models on longitudinal data for learning.
- <https://github.com/tmsalab/hmcDM>

The **ProcData** R package

Co-author

- A package for exploratory process data analysis.
- <https://github.com/xytangtang/ProcData>

## SERVICE

**Editorial Board Member:**

- *Journal of Educational and Behavioral Statistics* (2022 - )
- *Journal of Educational Measurement* (2022 - )
- *AERA Open* (2023 - )
- *British Journal of Mathematical and Statistical Psychology* (2024 - )

**Managing Editor:**

- *Applied Psychological Measurement* (2017 - 2019)



### **Professional Committee:**

- National Council on Measurement in Education  
*Dissertation Award Committee* Chair (2023); Member (2021 - 2023)
- Psychometric Society  
*Graduate Student Committee* Member (2019 - 2020)  
*Annual Conference Program Committee* Member (2023)

### **Grant Proposal Reviewer:**

- National Science Foundation: Methodology, Measurement, and Statistics (Merit reviewer; 2021, 2023)
- Institute of Education Sciences: Statistics and Methodology (Panel member; 2024)

### **Ad-hoc Manuscript Reviewer:**

- *AERA Open*
- *Applied Psychological Measurement*
- *British Journal of Mathematical and Statistical Psychology*
- *Behavioral Research Methods*
- *Computers and Education*
- *Educational and Psychological Measurement*
- *Educational Measurement: Issues and Practice*
- *Frontiers in Psychology*
- *Handbook of Diagnostic Classification Models*
- *International Journal of Testing*
- *Journal of Classification*
- *Journal of Educational and Behavioral Statistics*
- *Journal of Intelligence*
- *Large-Scale Assessments in Education*
- *Psychometrika*

### **Conference Proposal Review Panel:**

- American Educational Research Association

### **Conference Volunteer, Discussant, or Session Chair:**

- International Meeting of the Psychometric Society (2018, 2020, 2023)
- National Council on Measurement in Education Annual Meeting (2022)

### **Professional Affiliations:**

- National Council on Measurement in Education
- Psychometric Society
- American Educational Research Association, Division D

## **AWARDS & HONORS**

### **External:**

- Alicia Cascallar Award, National Council on Measurement in Education (2022)
- Outstanding Reviewer Award, Journal of Educational and Behavioral Statistics (2020, 2023)

### **University of Illinois Urbana-Champaign:**

- Lincoln Excellence for Assistant Professors Scholar, College of Liberal Arts & Sciences, 2024 - 2026
- List of Teachers Ranked as Excellent by Students, Center for Innovation in Teaching & Learning, 2016, 2021, 2022, 2023, 2024
- Jeffrey Tanaka Memorial Award, Department of Psychology, 2018.
- Student Travel Award, Department of Psychology, 2018.
- Conference Travel Award, Graduate College, 2017.
- Hobson Fellowship, Department of Psychology, 2014 - 2015 & 2015 - 2016.