

**Jordan M. Wheeler**  
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## Education

- Ph.D. Candidate, Quantitative Methodology**, University of Georgia August 2019 - Present  
*Advisor:* Allan S. Cohen, Ph.D.
- M.S., Mathematical Statistics**, University of Nebraska at Omaha May 2019  
*Master's Project:* Automated ARMA and GARCH Forecasting Application  
*Advisor:* Andrew W. Swift, Ph.D.
- B.S., Mathematics**, Nebraska Wesleyan University May 2017

## Academic Experience

- University of Georgia**  
**Graduate Research Assistant**, Department of Educational Psychology August 2019 - Present  
**Research Assistant**, Georgia Center for Assessment August 2019 - May 2021
- University of Nebraska at Omaha**  
**Research Assistant**, Department of Statistics August 2018 - May 2019

## Research Interests

psychometric modeling; topic models; process data; estimation procedures; Bayesian modeling; rater-mediated assessments

## Publications

### **Journal Articles**

1. **Wheeler, J. M.**, Engelhard, G., & Wang, J. (in press) Exploring Rater Accuracy Using Unfolding Models Combined with Topic Models: Incorporating Supervised Latent Dirichlet Allocation. *Measurement: Interdisciplinary Research and Perspectives*.

### **Conference Proceedings**

6. **Wheeler, J. M.**, Xiong, J., Mardones, C., Choi, H.-J., & Cohen, A. S. (Accepted) An Investigation of Prior Specification on Parameter Recovery for Latent Dirichlet Allocation of Constructed-Response Items. In Wiberg, M., Böckenholt, U., Gonzalez, J., Molenaar, D. & Kim, J.-S. (Editors) *Quantitative Psychology: The 86th Annual Meeting of the Psychometric Society*.
5. Xiong, J., **Wheeler, J. M.**, Choi, H.-J., & Cohen, A. S. (Accepted) A Bi-Level Individualized Adaptive Learning Recommendation System Based on Topic Modeling. In Wiberg, M., Böckenholt, U., Gonzalez, J., Molenaar, D. & Kim, J.-S. (Editors) *Quantitative Psychology: The 86th Annual Meeting of the Psychometric Society*.
4. Mardones, C., Choi, H.-J., Hong, M., **Wheeler, J. M.**, & Cohen, A. S. (Accepted) Comparison of Estimation Algorithms for Latent Dirichlet Allocation. In Wiberg, M., Böckenholt, U., Gonzalez, J., Molenaar, D. & Kim, J.-S. (Editors) *Quantitative Psychology: The 86th Annual Meeting of the Psychometric Society*.

3. **Wheeler, J. M.**, Cohen, A. S., Xiong, J., Lee, J., & Choi, H.-J. (2021) Sample Size for Latent Dirichlet Allocation of Constructed-Response Items. In Wiberg, M., Böckenholt, U., Gonzalez, J., Molenaar, D. & Kim, J.-S. (Editors) *Quantitative Psychology: The 85th Annual Meeting of the Psychometric Society*.
2. Xiong, J., **Wheeler, J. M.**, Lee, J., Choi, H.-J., & Cohen, A. S (2021) An Empirical Study of Developing Automated Scoring Engine using supervised Latent Dirichlet Allocation. In Wiberg, M., Böckenholt, U., Gonzalez, J., Molenaar, D. & Kim, J.-S. (Editors) *Quantitative Psychology: The 85th Annual Meeting of the Psychometric Society*.
1. Kim, S.-H., Duong, E., Mardones, C., Schellman, M., **Wheeler, J. M.**, Xiong, J., Zheng, G., Zor, S., & Cohen, A. S. (2021) Priors in Bayesian Estimation Under the Two- Parameter Logistic Model. In Wiberg, M., Böckenholt, U., Gonzalez, J., Molenaar, D. & Kim, J.-S. (Editors) *Quantitative Psychology: The 85th Annual Meeting of the Psychometric Society*.

## Book Chapters

1. Shermis, M. D., Cohen, A. S., & **Wheeler, J. M.** (under review). Test Administration and Scoring. *Educational Measurement* (5th edition).

## Manuscripts Submitted to Journals

3. **Wheeler, J. M.**, Cohen, A. S., & Wang, S. (under review) Comparison of Latent Semantic Analysis and Latent Dirichlet Allocation in Educational Measurement.
2. **Wheeler, J. M.**, Raczynski, K., Cohen, A. S., & Engelhard, G. (under review) Using Topic Models to Understand Rater-Mediated Assessments.
1. Mardones, C., **Wheeler, J. M.**, Cohen, A. S., & Choi, H.-J. (submitted) Model Selection for Latent Dirichlet Allocation with Short Answers.

## Manuscripts in Preparation

2. **Wheeler, J. M.**, Wang, S., Tan, Y., & Cohen, A. S. (in preparation) Textual Data as Process Data: A new scoring procedure to improve ability estimation for mixed format assessments.
1. Xiong, J., Liu, Q., Wang, S., **Wheeler, J. M.**, & Cohen, A. S. (in preparation) Machine Learning - Assisted Psychometrics: Principles, Challenges, and Applications.

## Presentations

### Invited Presentations

3. **Wheeler, J. M.** (2021, November) Structural Tradition: Explanatory Item Response Model. *Theories of Educational Measurement, Department of Educational Psychology, University of Georgia, Athens, GA*.
2. **Wheeler, J. M.** (2021, October) Introduction of Reliability for Assessments. *Classroom Assessments, Department of Educational Psychology, University of Georgia, Athens, GA*.
1. Cohen, A. S., & **Wheeler, J. M.** (2021, February) Topic Modeling of Answers to Constructed Response Tests. *Department of Psychology, University of Notre Dame, South Bend, IN*.

## Conference Papers

19. **Wheeler, J. M.**, Wang, S., Tan, Y., & Cohen, A.S. (2022, April; accepted) *Textual Data as Process Data: A New Scoring Procedure for Mixed-Format Assessments*. Paper to be presented at the Annual Meeting of the National Council on Measurement in Education. San Diego, Ca.

18. Englehard, G., Wind, S., & **Wheeler, J. M.** (2021, December) *Revisiting and Extending the Family of Rasch Models*. Paper presented at the Pacific Rim Objective Measurement Society Conference. Nanjing, China (Virtual).
17. **Wheeler, J. M.**, Xiong, J., Mardones, C., Choi, H.-J., & Cohen, A. S. (2021, July) *Impact of priors on parameter recovery for latent Dirichlet allocation*. Paper presented at the International Meeting of the Psychometric Society (IMPS). College Park, MD (Virtual).
16. Xiong, J., **Wheeler, J. M.**, Choi, H.-J., & Cohen, A. S. (2021, July) *Individualized test preparation recommendation systems based on latent Dirichlet allocation*. Paper presented at the International Meeting of the Psychometric Society (IMPS). College Park, MD (Virtual).
15. Xiong, J., **Wheeler, J. M.**, & Cohen, A. S. (2021, July) *Applications of machine learning in educational and psychological measurement*. Paper presented at the International Meeting of the Psychometric Society (IMPS). College Park, MD (Virtual).
14. Mardones, C., Choi, H.-J., Hong, M., **Wheeler, J. M.**, & Cohen, A. S. (2021, July) *Comparison of estimation algorithms for latent Dirichlet allocation*. Paper presented at the International Meeting of the Psychometric Society (IMPS). College Park, MD (Virtual).
13. **Wheeler, J. M.**, Wang, S., & Cohen, A. S. (2021, June) *Comparison of Latent Semantic Analysis and Latent Dirichlet Allocation*. Paper presented at the Annual Meeting of the National Council on Measurement in Education (Virtual).
12. **Wheeler, J. M.**, Choi, H.-J., Cohen, A. S., Xiong, J., & Lee, J. (2021, June) *A Semi-Confirmatory Latent Dirichlet Allocation Topic Model*. Paper presented at the Annual Meeting of the National Council on Measurement in Education (Virtual).
11. Raczynski, K., Choi, H.-J., **Wheeler, J. M.**, Shermis, M., Lottridge, S., Cohen, Y., & Cohen, A.S. (2021, June) *Using Artificial Intelligence for Constructed-Response Scoring: Some Practical Considerations*. Symposium presented at the Annual Meeting of the National Council on Measurement in Education (Virtual).
10. Mardones, C., **Wheeler, J. M.**, Choi, H.-J., & Cohen, A. S. (2021, June) *Model Selection for Latent Dirichlet Allocation with Small Number of Topics*. Paper presented at the Annual Meeting of the National Council on Measurement in Education (Virtual).
9. Lee, J., Xiong, J., **Wheeler, J. M.**, Choi H.-J., & Cohen, A. S. (2021, June) *Application of Multidimensional Mixture IRT and supervised-LDA for DIF in Mixed-Format Test*. Paper presented at the Annual Meeting of the National Council on Measurement in Education (Virtual).
8. **Wheeler, J. M.**, Engelhard, G. Jr., & Wang, J. (2021, April) *Exploring Rater Accuracy Using Unfolding Models Combined with Topic Models Incorporating Supervised Latent Dirichlet Allocation*. Paper presented at the Annual Conference of the American Educational Research Association (Virtual).
7. **Wheeler, J. M.**, Cohen, A. S., Xiong, J., Lee, J., & Choi, H.-J. (2020, July) *A Simulation Guide for Topic Models of Constructed-Response Items*. Paper presented at the International Meeting of the Psychometric Society (IMPS) in College Park, MD (Virtual).
6. Xiong, J., **Wheeler, J. M.**, Lee, J., Choi, H.-J., & Cohen, A. S. (2020, July) *An Empirical Study of Developing Automated Scoring Engine using supervised Latent Dirichlet Allocation*. Paper presented at the International Meeting of the Psychometric Society (IMPS) in College Park, MD (Virtual).
5. Kim, S.-H., Duong, E., Mardones, C., Schellman, M., **Wheeler, J. M.**, Xiong, J., Zheng, G., Zor, S., & Cohen, A. S. (2020, July) *Priors in Bayesian Estimation for the Two- and Three-Parameter Logistic Models* Paper presented at the International Meeting of the Psychometric Society (IMPS) in College Park, MD (Virtual).
4. **Wheeler, J. M.**, & Cohen, A. S. (2020, April) *Comparison of Latent Semantic Analysis and Latent Dirichlet Allocation*. Paper accepted at the Annual Meeting of the National Council on Measurement in Education in San Francisco, CA (Conference Canceled).

3. **Wheeler, J. M.**, Cohen, A. S., Choi, H.-J., Lee, J., & Xiong, J. (2020, February) *Ninth Grade English Language Arts Constructed-Response Item: A Topic Model Analysis*. Poster presented at the College of Education Graduate Student Research Conference in Athens, GA.
2. Xiong, J., **Wheeler, J. M.**, Lee, J., Choi, H.-J., & Cohen, A. S (2020, February) *An Empirical Study of Constructing Topic Structures Using Latent Dirichlet Allocation*. Poster presented at the College of Education Graduate Student Research Conference in Athens, GA.
1. Choi, H.-J., Xiong, J., Lai, S., Raczynski, K., **Wheeler, J. M.**, & Lee, J. (2019, October) *A New Method for Analyzing Students' Answers for Constructed Response Items in Formative Assessments: An Application of a Topic Model*. Paper presented at the Georgia Educational Research Association Annual Conference in Macon, GA.

## Technical Reports

1. Kwak, M., Xiong, J., Kim, S., **Wheeler, J. M.**, Lee, J., Choi, H.-J., & Cohen, A. S. (2019) *Georgia Center for Assessment Writing Assessment Analysis Summary Report*. Technical Report. Georgia Center for Assessment.

## Teaching Experience

- Graduate Teaching Assistant, ERSH 6600E, Classroom Assessment** Fall 2021  
 Gave lectures over various assessment topics (e.g., reliability, fairness)  
 Graded homework and project assignments  
 Held office hours to answer questions and assist students
- Graduate Teaching Assistant, ERSH 8610, Theories of Educational Measurement** Fall 2021  
 Helped answer questions from students  
 Graded and provided feedback on term papers  
 Gave a lecture over Explanatory Item Response Models

## Work Experience

- Data Scientist, CATCH Intelligence** August 2018 - July 2019  
 Consulted with clients across multiple industries  
 Built and delivered data pipelines and predictive models
- Data Science Intern, CATCH Intelligence** January 2018 - August 2018  
 Researched different machine learning models  
 Generated visualizations and slide decks for proof of concepts
- Mathematics Mentor, Lincoln Public Schools** August 2017 - January 2018  
 Created lesson plans and used multiple strategies to teach required topics  
 Accountable for writing reports on students' progress for administration

## Service Activities and Leadership Positions

- Peer Reviewer for Journals  
*Educational Measurement: Issues and Practices*
- Graduate Researchers in Educational Psychology (GREP)  
 University of Georgia, Department of Educational Psychology  
*Executive Committee: Vice President* June 2021 - Present

*Executive Committee: Secretary*

June 2020 - June 2021

**Honors**

College of Education's Research Scholar Award August 2019 - Present  
*University of Georgia, College of Education Fellowship*

Outstanding Scholarship in Quantitative Methodology May 2021  
*University of Georgia, Department of Educational Psychology*

Second Place: Machine Learning Kaggle Competition Spring 2019  
*University of Nebraska Omaha, Statistics Department*

**Miscellaneous****Application Development**

**Wheeler, J. M.** (2020) Item Response Theory's Item Characteristic Curve Generator. *Shiny Application*. Retrieve: <http://159.65.226.102/shiny/SingleItemCharacteristicCurve/>

**Wheeler, J. M.** (2019) NYSE Automated Generalized Autoregressive Conditional Heteroskedasticity Forecasting. *Shiny Application*. Retrieve: <http://159.65.226.102/shiny/ForecastingApplication/>

**Software Skills**

R, Python, and Mplus

Git, SQL, and Microsoft Office

JAGS, Stan, OpenBUGS, WinBUGS, Facets, and BILOG-MG

**Professional Affiliations**

Psychometric Society 2020 - Present

American Educational Research Association 2020 - Present

National Council on Measurement in Education 2020 - Present