

Jordan M. Wheeler
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Education

- Ph.D. Student, Educational Psychology**, University of Georgia (August 2019 - Present)
Concentration: Quantitative Methodology
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 - Present
- University of Nebraska at Omaha**
Research Assistant, Department of Statistics August 2018 - May 2019

Research Interests

item response theory; topic models; process data; rater-mediated assessments; Bayesian modeling; mixture models

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

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

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

Manuscripts in Preparation

2. **Wheeler, J. M.**, Wang, S., Tan, Y., & Cohen, A. S. (in preparation) Feature extraction of Process data from Topic Models: Application to Ability Estimation in Item Response Theory Models.
1. Xiong, J., Liu, Q., **Wheeler, J. M.**, & Cohen, A. S. (in preparation) Machine Learning - Assisted Psychometrics: Principles, Challenges, and Applications.

Presentations

Invited Presentations

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

17. **Wheeler, J. M.**, Xiong, J., Mardones, C., Choi, H.-J., & Cohen, A. S. (Accepted; 2021, July) *Impact of priors on parameter recovery for latent Dirichlet allocation*. Paper to be 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. (Accepted; 2021, July) *Individualized test preparation recommendation systems based on latent Dirichlet allocation*. Paper to be presented at the International Meeting of the Psychometric Society (IMPS). College Park, MD (Virtual).
15. Xiong, J., **Wheeler, J. M.**, & Cohen, A. S. (Accepted; 2021, July) *Applications of machine learning in educational and psychological measurement*. Paper to be 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. (Accepted; 2021, July) *Comparison of estimation algorithms for latent Dirichlet allocation*. Paper to be 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

Georgia Center for Assessment

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.

Work Experience

Data Scientist, CATCH Intelligence

Consulted with clients across multiple industries

August 2018 - July 2019

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/Leadership Positions

Graduate Researchers in Educational Psychology (GREP)

University of Georgia, Department of Educational Psychology

Executive Committee: Vice President

Executive Committee: Secretary

June 2021 - Present

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

Programming

R, Python, and Mplus

Git, SQL, and Microsoft Office

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

Professional Associations

Psychometric Society

2020 - Present

American Educational Research Association

2020 - Present

National Council on Measurement in Education

2020 - Present