

MINGYA HUANG

University of Wisconsin–Madison

1025 W Johnson St, Madison, WI 53706

✉ mhuang233@wisc.edu |  [mhuang233](https://github.com/mhuang233) |  mhuang233.github.io

Education

University of Wisconsin–Madison (UW–Madison) 2025

Ph.D. Quantitative Methods | Department of Educational Psychology

Committee: Drs. David Kaplan (Chair), Sameer Deshpande, Jee-Seon Kim, & James Pustejovsky

M.S. Statistics | Department of Statistics

Advisor: Dr. Sameer Deshpande

Minor. Computer Sciences | Department of Computer Sciences

University of Illinois at Urbana–Champaign (UIUC) 2019

M.S. QUERIES | Department of Educational Psychology

Advisor: Dr. Carolyn Anderson

University of Macao (UM) | Honors College 2015

B.Ed. Education

Minor. Psychology

Research Interests

Bayesian Statistics | Machine Learning | Multilevel Modeling | Causal Inference

- Bayesian ensemble learning for personalized predictive modeling in large-scale assessments.
- Bayesian nonparametrics for dynamic modeling in multilevel and longitudinal data.
- Bayesian causal effects estimation in observational/experimental settings.
- Applications of Bayesian statistics/machine learning in social and behavioral sciences.

Preprints

- 6 **Huang, M.** (2025+). Bayesian treed regressions for estimating heterogeneous trajectories of test scores in large-scale educational assessments. PsyArXiv:
<https://doi.org/10.31234/osf.io/s6cb3>.

Publications

Peer-reviewed Journal Articles

- 5 **Huang, M.**, & Kaplan, D. (2024) Predictive performance of Bayesian stacking in multilevel education data. *Journal of Educational and Behavioral Statistics*. DOI: [10769986241255969](https://doi.org/10.31234/osf.io/e9m6x). PsyArXiv: <https://doi.org/10.31234/osf.io/e9m6x>.
- 4 Garbacz, S. A., Stormshak, E. A., McIntyre, L. L., Bolt, D., & **Huang, M.** (2024). Family-Centered Prevention During Elementary School to Reduce Growth in Emotional and Behavior Problems. *Journal of Emotional and Behavioral Disorders*. DOI: [10.1177/10634266221143720](https://doi.org/10.1177/10634266221143720).
- 3 Xia, Y., Luo, Y., **Huang, M.**, & Yang, Y. (2022). On the use of inclusive strategy when some participants fail to provide data on all studied variables. *International Journal of Quantitative Research in Education*, 5(4), 356-378. DOI: [10.1504/IJQRE.2022.129794](https://doi.org/10.1504/IJQRE.2022.129794)
- 2 Kaplan, D., & **Huang, M.** (2021). Bayesian probabilistic forecasting with large-scale educational trend data: a case study using NAEP. *Large-scale Assessments in Education*, 9(1), 1-31. DOI: [10.1186/s40536-021-00108-2](https://doi.org/10.1186/s40536-021-00108-2).

Book Chapters

- 1 **Huang, M.**, & Anderson, C. (2021). A Bayesian solution to non-convergence of crossed random effects models. *Quantitative Psychology*, (pp. 297-307). Springer International Publishing. DOI: [10.1007/978-3-030-74772-5_27](https://doi.org/10.1007/978-3-030-74772-5_27).

Conference Presentations

* indicates students mentored.

- **Huang, M.**, Lyu W., & Kaplan D. (2025) [Virtual]. “Personalized predictive modeling with input-dependent weighting scheme: A flexible Bayesian nonparametric approach”. Presented at the world meeting of The Bayesian Young Statisticians Meeting (BAYSM).
- **Huang, M.** (2024). “Bayesian treed regressions for estimating heterogeneous trajectories of test scores in large-scale data”. Presented at the world meeting of the International Society of Bayesian Analysis (ISBA), Venice, Italy.
- **Huang, M.** (2024). “Bayesian Additive Regression Trees for estimating heterogeneous trajectories of test scores in large-scale educational data”. Presented at the 89th Annual International Meeting of Psychometric Society (IMPS), Prague, Czech Republic.
- Edwards, E.*, & **Huang, M.** (2024). “Predictive performance of Bayesian model mixing in large-scale clustered data”. Presented at the 5th Annual Data Science Research Bazaar, Madison, WI.
- Edwards, E.*, & **Huang, M.** (2024). “Predictive performance of Bayesian model mixing in large-scale clustered data”. Presented at the Undergraduate Research Symposium, Madison, WI.

- **Huang, M.**, & Kaplan, D. (2023). “Bayesian stacking in multilevel Models”. Presented at the 88th Annual International Meeting of Psychometric Society (IMPS), College Park, MD.
- **Huang, M.**, & Kaplan, D. (2023). “Bayesian hierarchical stacking in large-scale assessment”. Presented at the Annual Meeting of the National Council on Measurement in Education (NCME), Chicago, IL.
- **Huang, M.**, & Kaplan, D. (2022). “Bayesian hierarchical stacking in random effects models”. Presented at the 87th Annual International Meeting of Psychometric Society (IMPS), Bologna, Italy.
- **Huang, M.**, & Anderson, C. (2020) [Virtual]. “A Bayesian solution to non-convergence of crossed random effects models”. Presented at the 85th Annual International Meeting of Psychometric Society (IMPS).
- Kaplan, D., & **Huang, M.** (2020) [Virtual]. “Bayesian probabilistic forecasting with large-scale educational trend data: a case study using NAEP”. Presented at the 85th Annual International Meeting of Psychometric Society (IMPS).
- **Huang, M.** (2019). “Self-concept, motivational calibration and biology performance of college students” [Accepted]. The Annual Meeting of American Educational Research Association (AERA). DOI: [10.3102/1431491](https://doi.org/10.3102/1431491).

Invited Talks

May 2024 “Bayesian treed regressions for estimating heterogeneous trajectories of test scores in large-scale clustered data”. Statistics Graduate Students Seminar, University of Wisconsin–Madison, Madison WI.

Teaching Experience

Teaching Assistant Guest Lecturer	<i>UW–Madison</i>
ED PSYCH 965 Applied Bayesian Statistics for Education Research	2024
ED PSYCH 763 Regression Models in Education	2024
ED PSYCH 762 Introduction to the Design of Educational Experiments	2024
ED PSYCH 761 Statistical Methods Applied to Education II	2023/2024/2025
ED PSYCH 760 Statistical Methods Applied to Education I	2022/2023
Graduate (Teaching) Assistant	<i>UIUC</i>
EPSY 199 Undergraduate Open Seminar	2018 – 2019
Intern Homeroom Teacher	<i>Champaign, IL</i>
<i>Jefferson Middle School</i>	Jan – May 2014

Research & Professional Experience

TA & Statistical Consultant Supervised by Drs. Jee-Seon Kim & James Pustejovsky Laboratory for Experimental Design (LED)	<i>UW-Madison</i> Fall 2024
Project Assistant Supervised by Dr. Rosalie Grant World-Class Instructional Design and Assessment (WIDA)	<i>UW-Madison</i> Summer 2023
Project Assistant Supervised by Drs. Jim Wollack & Sonya Sedivy Testing and Evaluation Services (T&E)	<i>UW-Madison</i> 2021 – 2022
Project Assistant Supervised by Dr. Bonnie Doren Wisconsin Center for Education Research (WCER)	<i>UW-Madison</i> Summer 2021
Chair Project Assistant Supervised by Drs. Daniel Bolt & Andy Garbacz Department of Education Psychology	<i>UW-Madison</i> 2020 – 2021
Graduate (Research) Assistant Supervised by Dr. Allison Witt International Student and Scholar Services	<i>UIUC</i> 2017 – 2018
Research Assistant Supervised by Drs. Tat Ming Sze & Daming Xu Honors College Research Program	<i>UM</i> 2012 – 2015

Honors & Awards

Department of Educational Psychology Dissertator Award \$ 6,250 <i>University of Wisconsin-Madison</i>	2024
Graduate School Fellowship \$ 71,272 <i>University of Wisconsin-Madison</i>	2019/2024
Student Travel Award \$ 500 <i>International Society of Bayesian Analysis (ISBA)</i>	2024
RAFA Travel Award \$ 1,500 <i>University of Wisconsin-Madison</i>	2022/2023/2024
Student Travel Award \$ 500 <i>Psychometric Society (PS)</i>	2023
Henry Fok Foundation Academic Prize \$ 10,000 <i>University of Macao</i>	2015
Dean's Honors List <i>University of Illinois at Urbana-Champaign</i>	2014

Wu's Group Scholarship \$ 10,000 <i>University of Macao</i>	2013
Dean's Honors List <i>University of Macao</i>	2011 – 2015
The Third Prize <i>National Biology Competition, China</i>	2010

Service

Session Chair	AERA/NCME 2025.
Ad-hoc Reviewer	AERA/NCME Annual Meeting.
Brown Bag Panelist	Educational Psychology Student Association (EPSA). <i>University of Wisconsin–Madison</i>
Graduate Research Mentor	Undergraduate Research Scholar Program. <i>University of Wisconsin–Madison</i>
Exchange Program Coordinator	Macao Honors College Exchange Program. <i>University of Illinois at Urbana–Champaign</i>

Professional Affiliations

Psychometric Society (PS)
American Statistical Association (ASA)
International Society of Bayesian Analysis (ISBA)
American Educational Research Association (AERA) – Division D

Computer Skills

R | Python | Stan | C/C++ | Git | Docker | SAS | *Mplus* | Shell script | L^AT_EX

References

Dr. David Kaplan Dept. of Ed Psychology UW–Madison david.kaplan@wisc.edu (608)-262-0836	Dr. Sameer Deshpande Dept. of Statistics UW–Madison sameer.deshpande@wisc.edu (608)-262-3609	Dr. Carolyn Anderson Dept. of Ed Psychology UIUC cja@illinois.edu (217)-244-3537
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