

MINGYA HUANG

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Education

University of Wisconsin–Madison (UW–Madison) Ph.D. Quantitative Methods Department of Educational Psychology Advisor: Dr. David Kaplan	2025 Expected
M.S. Statistics Department of Statistics Advisor: Dr. Sameer Deshpande	2024
Minor. Computer Sciences Department of Computer Sciences	2023
University of Illinois at Urbana–Champaign (UIUC) M.S. QUERIES Department of Educational Psychology Advisor: Dr. Carolyn Anderson	2019
University of Macao (UM) Honors College B.Ed. Education Minor. Psychology	2015

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.** (2024+). 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. 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.
- 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
- 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.

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.

Working Papers & Research in Progress

* indicates co-first author.

- 5 **Huang, M.**, Lyu, W., Edward, E. & Kaplan, D. (2024+). Personalized predictive modeling using Bayesian nonparametric methods with input-dependent weighting scheme. [Manuscript in preparation].
- 4 **Huang, M.**, Ghosh, S. & Bolt, D. (2024+). A Bayesian multinomial item response theory model with spatial clustering. [Manuscript in preparation].
- 3 Kanopka, K., **Huang, M.***, & Perrett, G. (2024+). Optimizing causal estimation in conjoint survey experiments with Bayesian treed regressions. [Finishing replications].
- 2 Kokandakar, A. H., **Huang, M.**, Lyu, W., & Deshpande, S. K. (2024+). A Bayesian nonparametric mixture approach for estimating heterogeneous treatment effects. [Coding in progress].
- 1 Pan, P., & **Huang, M.**, & Anderson, C. (2024+). Navigating crossed-classified random effects: A comprehensive Bayesian tutorial. [Manuscript in preparation].

Conference Presentations

- **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 Psychometric Society International Meeting (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 Psychometric Society International Meeting (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 Psychometric Society International Meeting (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 Psychometric Society International Meeting (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 Psychometric Society International Meeting (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 964 Hierarchical Linear Modeling	2025
ED PSYCH 763 Regression Models in Education	2024/2025
ED PSYCH 762 Introduction to the Design of Educational Experiments	2024
ED PSYCH 761 Statistical Methods Applied to Education II	2023/2024
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	<i>UW–Madison</i>
Supervised by Dr. Jee-Seon Kim & Dr. James Pustejovsky	2024 – 2025
Lab for Experimental Design (LED)	
Project Assistant	<i>UW–Madison</i>
Supervised by Dr. Rosalie Grant	Summer 2023
World-Class Instructional Design and Assessment (WIDA)	
Project Assistant	<i>UW–Madison</i>
Supervised by Dr. James Wollack & Dr. Sonya Sedivy	2021 – 2022
Testing and Evaluation Services (T&E)	
Project Assistant	<i>UW–Madison</i>
Supervised by Dr. Bonnie Doren	Summer 2021
Wisconsin Center for Education Research (WCER)	
Chair Project Assistant	<i>UW–Madison</i>
Supervised by Dr. Daniel Bolt & Dr. Andy Garbacz	2020 – 2021
Department of Education Psychology	

Graduate (Research) Assistant
Supervised by Dr. Allison Witt
International Student and Scholar Services

UIUC
2017 – 2018

Research Assistant
Supervised by Dr. Tat Ming Sze & Dr. Daming Xu
Honors College Research Program

UM
2012 – 2015

Honors & Awards

Department of Educational Psychology Dissertator Award <i>University of Wisconsin–Madison</i>	2024
Graduate School Fellowship <i>University of Wisconsin–Madison</i>	2019/2024
Student Travel Award <i>International Society of Bayesian Analysis (ISBA)</i>	2024
RAFA Travel Award <i>University of Wisconsin–Madison</i>	2022/2023/2024
Student Travel Award <i>Psychometric Society (PS)</i>	2023
Henry Fok Foundation Academic Prize <i>University of Macao</i>	2015
Dean’s Honors List <i>University of Illinois at Urbana–Champaign</i>	2014
Wu’s Group Scholarship <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

Ad-hoc Reviewer	AERA/NCME Annual Meeting.
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)

International Society of Bayesian Analysis (ISBA)

American Psychological Association (APA) – Division 5

American Educational Research Association (AERA) – Division D

Computer Skills

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

References

Dr. David Kaplan

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Dr. Sameer Deshpande

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Dr. Carolyn Anderson

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