

# MINGYA HUANG

University of Wisconsin–Madison

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## Education

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

## Research Interests

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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 and machine learning in social and behavioral sciences.

## Preprints

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- 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

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## 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*, 10634266221143720. 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).

## Working Papers & Research in Progress

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\* indicates co-first author.

- 5 **Huang, M.**, Lyu, W., & Kaplan, D. (2024+). Personalized predictive modeling using Bayesian nonparametric methods with input-dependent weighting scheme. [**Finishing simulation**].
- 4 **Huang, M.**, & Ghosh, S. (2024+). A Bayesian multinomial item response theory model with spatial clustering. [**Coding in progress**].
- 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

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- **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

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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

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<b>Teaching Assistant   Guest Lecturer</b>	<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
ED PSYCH 760 Statistical Methods Applied to Education I	2022/2023
<b>Graduate (Teaching) Assistant</b>	<i>UIUC</i>
EPSY 199 Undergraduate Open Seminar	2018 – 2019
<b>Intern Homeroom Teacher</b>	<i>Urbana, IL</i>
<i>Jefferson Middle School</i>	Jan – May 2014

## Research & Professional Experience

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<b>TA &amp; Statistical Consultant</b>	<i>UW–Madison</i>
Supervised by Dr. Jee-Seon Kim & Dr. James Pustejovsky	2024 – 2025
Lab for Experimental Design (LED)	
<b>Project Assistant</b>	<i>UW–Madison</i>
Supervised by Dr. Rosalie Grant	Summer 2023
World-Class Instructional Design and Assessment (WIDA)	
<b>Project Assistant</b>	<i>UW–Madison</i>
Supervised by Dr. James Wollack & Dr. Sonya Sedivy	2021 – 2022
Testing and Evaluation Services (T&E)	
<b>Project Assistant</b>	<i>UW–Madison</i>
Supervised by Dr. Bonnie Doren	Summer 2021
Wisconsin Center for Education Research (WCER)	
<b>Chair Project Assistant</b>	<i>UW–Madison</i>
Supervised by Dr. Daniel Bolt & Dr. Andy Garbacz	2020 – 2021
Department of Educational Psychology	

<b>Graduate (Research) Assistant</b>	<i>UIUC</i>
Supervised by Dr. Allison Witt	2017 – 2018
International Student and Scholar Services	
<b>Research Assistant</b>	<i>UM</i>
Supervised by Dr. Tat Ming Sze & Dr. Daming Xu	2012 – 2015
Honors College Research Program	

## Honors & Awards

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<b>Graduate School Fellowship</b>	2019/2024
<i>University of Wisconsin–Madison</i>	
<b>Student Travel Award</b>	2024
<i>International Society of Bayesian Analysis (ISBA)</i>	
<b>Busk Travel Scholarship</b>	2024
<i>University of Wisconsin–Madison</i>	
<b>Student Travel Award</b>	2023
<i>Psychometric Society (PS)</i>	
<b>RAFA Travel Award</b>	2022/2023
<i>University of Wisconsin–Madison</i>	
<b>Henry Fok Foundation Academic Prize</b>	2015
<i>University of Macao</i>	
<b>Dean’s Honors List</b>	2014
<i>University of Illinois at Urbana–Champaign</i>	
<b>Wu’s Group Scholarship</b>	2013
<i>University of Macao</i>	
<b>Dean’s Honors List</b>	2011 – 2015
<i>University of Macao</i>	
<b>The Third Prize</b>	2010
<i>National Biology Competition, China</i>	

## Service

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<b>Ad-hoc Reviewer</b>	AERA/NCME Annual Meeting.
<b>Graduate Research Mentor</b>	Undergraduate Research Scholar Program. <i>University of Wisconsin–Madison</i>
<b>Exchange Program Coordinator</b>	Macao Honors College Exchange Program. <i>University of Illinois at Urbana–Champaign</i>

## Professional Affiliations

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Psychometric Society (PS)

International Society of Bayesian Analysis (ISBA)

American Psychological Association (APA) – Division 5

American Educational Research Association (AERA) – Division D

## Computer Skills

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R | Python | Stan | SAS | *Mplus* | shell script | C/C++ | Git | Docker | L<sup>A</sup>T<sub>E</sub>X

## References

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### Dr. David Kaplan

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### Dr. Sameer Deshpande

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### Dr. Carolyn Anderson

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