

# MINGYA HUANG

University of Wisconsin–Madison

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## Education

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

## 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/machine learning in social and behavioral sciences.

## Preprints

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- 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

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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*. 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

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- 5 **Huang, M.**, Lyu, W., & Kaplan, D. (2025+). Personalized predictive modeling using Bayesian nonparametric methods with input-dependent weighting scheme. [**Manuscript in preparation**].
- 4 **Huang, M.**, Ghosh, S. & Bolt, D. (2025+). A Bayesian multinomial item response theory model with spatial clustering. [**Manuscript in preparation**].
- 3 **Huang, M.**, Kokandakar, A. H., Lyu, W., & Deshpande, S. K. (2025+). A Bayesian nonparametric mixture approach for estimating heterogeneous treatment effects. [**Coding in progress**].
- 2 Kanopka, K., **Huang, M.**, & Perrett, G. (2025+). Optimizing Causal effects estimation in conjoint survey experiments with Bayesian treed regressions. [**Finishing replications**].
- 1 Pan, P., & **Huang, M.**, & Anderson, C. (2025+). 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 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

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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 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
<b>Graduate (Teaching) Assistant</b>	<i>UIUC</i>
EPSY 199 Undergraduate Open Seminar	2018 – 2019
<b>Intern Homeroom Teacher</b>	<i>Champaign, 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
Laboratory 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 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

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**Department of Educational Psychology Dissertator Award** 2024

*University of Wisconsin–Madison*

**Graduate School Fellowship** 2019/2024

*University of Wisconsin–Madison*

**Student Travel Award** 2024

*International Society of Bayesian Analysis (ISBA)*

**RAFA Travel Award** 2022/2023/2024

*University of Wisconsin–Madison*

**Student Travel Award** 2023

*Psychometric Society (PS)*

**Henry Fok Foundation Academic Prize** 2015

*University of Macao*

**Dean's Honors List** 2014

*University of Illinois at Urbana–Champaign*

**Wu's Group Scholarship** 2013

*University of Macao*

**Dean's Honors List** 2011 – 2015

*University of Macao*

**The Third Prize** 2010

*National Biology Competition, China*

## Service

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**Ad-hoc Reviewer**

AERA/NCME Annual Meeting.

**Graduate Research Mentor**

Undergraduate Research Scholar Program.

*University of Wisconsin–Madison*

**Exchange Program Coordinator**

Macao Honors College Exchange Program.

*University of Illinois at Urbana–Champaign*

## Professional Affiliations

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Psychometric Society (PS)

American Statistical Association (ASA)

International Society of Bayesian Analysis (ISBA)

American Educational Research Association (AERA) – Division D

## Computer Skills

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R | Python | Stan | C/C++ | Git | Docker | SAS | *Mplus* | Shell script |  $\text{\LaTeX}$

## References

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### Dr. David Kaplan

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UW–Madison

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### Dr. Sameer Deshpande

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### Dr. Carolyn Anderson

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Last updated: December 2024