

# MINGYA HUANG

University of Wisconsin – Madison

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## Education

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**University of Wisconsin – Madison (UW–Madison)** 2019 – 2025 Expected

**PhD. Educational Psychology (Quantitative Methods)**

(Advisor: Dr. David Kaplan)

**M.S. Statistics**

(Advisor: Dr. Sameer Deshpande)

**Minor. Computer Science**

**University of Illinois at Urbana – Champaign (UIUC)**

2017 – 2019

**M.S. QUERIES**

(Advisor: Dr. Carolyn Anderson)

**University of Macao (UM) | Honor College**

2011 – 2015

**B.Ed. Education**

**Minor. Psychology**

## Research Interests

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- **Bayesian Statistics:** Bayesian nonparametrics.
- **Machine Learning:** Ensemble methods.
- **Clustering:** Hierarchical and mixture-based clustering.
- **Causal Inference:** Heterogeneous treatment effects.
- **Applications in Education, Psychology, and Population Health.**

## Preprints

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- 6 **Huang M.** (2024+). Bayesian additive regression trees for estimating heterogeneous trajectories of test scores in large-scale education assessment. PsyArXiv: <https://doi.org/10.31234/osf.io/s6cb3>.

# Publications

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## Peer-reviewed Journal Articles

- 5 **Huang M.**, & Kaplan, D. (2024) [In press]. Predictive performance of Bayesian stacking in multilevel education data. *Journal of Educational and Behavioral Statistics*, PsyArXiv: <https://doi.org/10.31234/osf.io/e9m6x>.
- 4 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)
- 3 Garbacz, S. A., Stormshak, E. A., McIntyre, L. L., Bolt, D., & **Huang, M.** (2022). 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).
- 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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- 4 **Huang, M.** (2024+). Bayesian nonparametric ensemble methods for personalized predictive modeling in educational testing.
- 3 Kaplan, D., & **Huang, M.** (2024+). Predictive performance when models are distinct: a Bayesian perspective.
- 2 Kokandakar, A.H., **Huang, M.** & Lyu, W., Deshpande, S.K. (2024+). A mixture of finite mixture modeling approach for estimating heterogeneous treatment effects.
- 1 Pan, P., & **Huang, M.**, & Anderson, C. (2024+). A tutorial of Bayesian methods for estimating crossed-classified random effects.

## 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 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 meeting of the Psychometric Society (IMPS), Prague, Czech Republic.
- Edwards, E., & **Huang, M.** (2024). “Predictive performance of Bayesian model mixing in large-scale data”. Presented at the 5th annual Research Bazaar, Madison, WI.
- **Huang, M.**, & Kaplan, D. (2023). “Bayesian stacking in multilevel Models”. Presented at the 88th annual meeting of the 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 meeting of the 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 meeting of the 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 meeting of the Psychometric Society (IMPS).
- **Huang, M.** (2019). “Self-concept, motivational calibration and biology performance of college students”. The Annual Meeting of American Educational Research Association (AERA) [Accepted]. 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 Association, University of Wisconsin – Madison, Madison WI.

## Teaching Experience

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### Teaching Assistant | Guest Lecturer

ED PSYCH 965 Applied Bayesian Statistics for Education Research	<i>UW–Madison</i> 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

EPSY 199 Undergraduate Open Seminar	<i>UIUC</i> 2018 – 2019
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**Intern Homeroom Teacher**  
*Jefferson Middle School*

*Urbana, IL*  
Jan – May 2014

## Professional Experience

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**Project Assistant** June – July 2023

World-Class Instructional Design and Assessment (WIDA)  
*University of Wisconsin – Madison*

**Project Assistant** 2021 – 2022

Testing and Evaluation Services (TNE)  
*University of Wisconsin – Madison*

**Project Assistant** June – August 2021

Wisconsin Center for Education Research (WCER)  
*University of Wisconsin – Madison*

**Chair Project Assistant** 2020 – 2021

Department of Educational Psychology  
*University of Wisconsin – Madison*

**Graduate (Research) Assistant** 2017 – 2018

International Student and Scholar Services  
*University of Illinois at Urbana – Champaign*

**Research Assistant** 2012 – 2015

Honor College Research Program  
*University of Macao*

**International Baccalaureate (IB) PYP Program Coordinator** 2015 – 2017

*Country Garden Silver Beach International School*

## Honors & Awards

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**Graduate School Fellowship** 2019/2024

*University of Wisconsin – Madison*

**Student Research Grant Competition Award** 2024

*University of Wisconsin – Madison*

**Student Travel Award** 2024

*International Society of Bayesian Analysis (ISBA)*

**Student Travel Award** 2023

*Psychometric Society (IMPS)*

**Busk Travel Award** 2023

*University of Wisconsin – Madison*

<b>Dean's Honor List</b> <i>University of Macao</i>	2011 – 2015
<b>Henry Fok Foundation Academic Prize</b> <i>University of Macao</i>	2015
<b>Dean's Honor List</b> <i>University of Illinois at Urbana – Champaign</i>	2014
<b>Wu's Group Scholarship</b> <i>University of Macao</i>	2013

## Service

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<b>Ad Hoc Reviewer</b>	AERA Annual Meeting.
<b>Graduate Research Mentor</b>	Undergraduate Research Scholar Program. <a href="#">evanije</a> . <i>University of Wisconsin – Madison</i>
<b>Exchange Program Coordinator</b>	Macao Exchange Services. <i>University of Illinois at Urbana–Champaign</i>

## Professional Affiliations

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Psychometric Society  
American Psychological Association (APA) Division 5  
International Society of Bayesian Analysis (ISBA)  
American Educational Research Association (AERA)

## Programming

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R, Python, Stan, SAS, *Mplus*, MATLAB, SPSS, CSS, shell script, C/C++, L<sup>A</sup>T<sub>E</sub>X, Git, Docker.