

# MINGYA HUANG

University of Wisconsin – Madison

1025 W Johnson St Room 1075A, Madison, WI 53706

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

## Education

---

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

## Research Interests

---

- **Bayesian Statistics:** Bayesian nonparametrics for developmental outcomes prediction.
- **Machine Learning:** ensemble methods for generalizable statistical inference.
- **Hierarchical Modeling:** dynamic cluster structure adapted to large-scale assessment.
- **Causal Inference:** heterogeneous treatment effects in experimental/observational settings.
- **Data Science in Education and Psychology:** STEM education and psychometrics.

## Preprints

---

- 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

---

## 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 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

---

- 5 **Huang, M.**, & Kaplan, D. (2024+). Enhancing predictive performance in Bayesian ensembles: A sensitivity analysis of adaptive priors.
- 4 **Huang, M.**, & Lyu, W. (2024+). Personalized predictive modeling using Bayesian nonparametric methods with input-dependent weighting scheme.
- 3 Kanopka, K., **Huang, M.**, Perrett, G., & Hill, J. (2024+). Optimizing causal estimations in conjoint survey experiments with Bayesian treed regressions.
- 2 Kokandakar, A.H., **Huang, M.**, Lyu, W., & Deshpande, S.K. (2024+). A Bayesian nonparametric mixture approach for estimating heterogeneous treatment effects.
- 1 Pan, P., & **Huang, M.**, & Anderson, C. (2024+). Navigating crossed-classified random effects: A comprehensive Bayesian tutorial.

## 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 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”. The Annual Meeting of American Educational Research Association (AERA) [Accepted]. 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 Association, University of Wisconsin – Madison, Madison WI.

## Teaching Experience

---

|   |                   |
|---|-------------------|
| <b>Teaching Assistant   Guest Lecturer</b>                      | <i>UW-Madison</i> |
| ED PSYCH 965 Applied Bayesian Statistics for Education Research | 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    |

## Professional Experience

---

|  |                    |
|--|--------------------|
| <b>LED TA &amp; Statistical Consultant</b>   | 2024 – 2025        |
| Department of Educational Psychology<br><i>University of Wisconsin – Madison</i>                   |                    |
| <b>Project Assistant</b>   | June – July 2023   |
| World-Class Instructional Design and Assessment (WIDA)<br><i>University of Wisconsin – Madison</i> |                    |
| <b>Project Assistant</b>   | 2021 – 2022        |
| Testing and Evaluation Services (TNE)<br><i>University of Wisconsin – Madison</i>                  |                    |
| <b>Project Assistant</b>   | June – August 2021 |
| Wisconsin Center for Education Research (WCER)<br><i>University of Wisconsin – Madison</i>         |                    |
| <b>Chair Project Assistant</b>   | 2020 – 2021        |
| Department of Educational Psychology<br><i>University of Wisconsin – Madison</i>                   |                    |
| <b>Graduate (Research) Assistant</b>   | 2017 – 2018        |
| International Student and Scholar Services<br><i>University of Illinois at Urbana – Champaign</i>  |                    |

|  |             |
|--|-------------|
| <b>Research Assistant</b><br>Honors College Research Program<br><i>University of Macao</i>                                 | 2012 – 2015 |
| <b>International Baccalaureate (IB) PYP Program Coordinator</b><br><i>Country Garden Silver Beach International School</i> | 2015 – 2017 |

## Honors & Awards

---

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

## Service

---

|                                     |   |
|-------------------------------------|---|
| <b>Ad Hoc Reviewer</b>              | AERA/NCME Annual Meeting.   |
| <b>Graduate Research Mentor</b>     | Undergraduate Research Scholar Program. <a href="#">evanije</a> .<br><i>University of Wisconsin – Madison</i> |
| <b>Exchange Program Coordinator</b> | Macao Honors College Exchange Program.<br><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

## Programming

---

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

Last updated: August 2024