

JING HUANG

Ph.D. Candidate, Educational Psychology & Research Methodology
Purdue University

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EDUCATION

Purdue University

Ph.D., Educational Psychology and Research Methodology (Advisor: Hua-Hua Chang)

Aug. 2023 – Present

West Lafayette, USA

Purdue University

M.S., Statistics (concurrent with the Ph.D.)

Jan. 2026 – Present

West Lafayette, USA

East China Normal University

M.Ed., Educational Psychology

Sep. 2020 – Jun. 2023

Shanghai, China

East China Normal University

B.S., Statistics

Sep. 2016 – Jun. 2020

Shanghai, China

RESEARCH INTERESTS

Test security, real-time item monitoring, item pool maintenance, computerized adaptive testing (CAT), large language models (LLMs), adaptive learning, and large-scale assessment.

HONORS AND AWARDS

ETS Harold Gulliksen Psychometric Research Fellowship

Aug. 2026

NCME Graduate Student Works-in-Progress eBoard Competition, Award Winner

Apr. 2026

Psychometric Society Vector Travel Award

Jul. 2025

Ross Fellowship, Purdue University

Mar. 2023

National Scholarship (12 of 6461), Ministry of Finance & Ministry of Education, China

Oct. 2022

Excellent Graduate (101 of 6461), East China Normal University

Oct. 2022

Shu Qing Encouragement Scholarship (22 of 6461), East China Normal University

Oct. 2021

Third Prize, Contemporary Graduate Statistical Contest in Modeling (Team Leader)

Dec. 2020

Second Prize, COVID-19 Data Analysis Contest (Team Leader)

Jul. 2020

National Encouragement Scholarship (1 of 71), East China Normal University

Dec. 2019

Third Prize, Contemporary Undergraduate Statistical Contest in Modeling (Team Leader)

Nov. 2019

Shanghai Popular Science Education Innovation Award, Second Prize

Nov. 2019

Meritorious Winner, Interdisciplinary Contest in Modeling (ICM), COMAP

Feb. 2019

Third-Class Scholarship for Excellent Student, East China Normal University

2017, 2019

PROFESSIONAL SERVICE

Conference Reviewer

NCME AIME-Con — Innovation Demonstration & Paper/Poster Session Review Modules (7 proposals)

2026

Journal Reviewer

Psychometrika

2025, 2026

Journal of Computerized Adaptive Testing

2025

PUBLICATIONS

* *Equal contribution.*

1. Huang, J., & Chang, H.-H. (2026). Real-Time Monitoring of Item Parameter Drift in CD-CAT via Adaptive CUSUM Charts. *Psychometrika*, 1–61. <https://doi.org/10.1017/psy.2026.10140>

2. Chang, H.-H., **Huang, J.**, Zhang, Y. X., Wang, X. Y., Le, V., Mehrabi, A., Salazar, A., Morphew, J. W., Nissen, J. M., & Van Dusen, B. (major revision). How We Know What Students Know: Rethinking College STEM Assessments with CD-CATs. *Psychometrika*.
3. **Huang, J.**, & Chang, H.-H. (major revision). A Cognitive Design System Approach to Enhancing Cognitive Alignment and Difficulty Control in Gen-AI Item Generation. *Applied Measurement in Education*.
4. **Huang, J.**, Zhang, J. H., & Chang, H.-H. (under review). A Dual-Dimensional LLM Framework for Automated Item Incidental Content Similarity Analysis in Large-Scale Assessments. *Applied Measurement in Education*.
5. Tao, Y.*, **Huang, J.***, & Yang, X. D. (major revision). What Drives Students' Everyday Creativity? *Thinking Skills and Creativity*.
6. Zhang, J. H., Liang, X. Y., & **Huang, J.** (major revision). A Multi-Agent Large Language Model Framework for Automated Q-Matrix Generation. *Psychometrika*.
7. **Huang, J.**, Zhang, Y. X., Morphew, J. W., Nissen, J. M., Van Dusen, B., & Chang, H.-H. (2025). Two-phase Content-balancing CD-CAT Online Item Calibration. *Journal of Educational Measurement*, 62(4), 787–808. <https://doi.org/10.1111/jedm.70012>
8. **Huang, J.**, Xin, Y. P., & Chang, H.-H. (2025). The Application of Machine Learning to Educational Process Data Analysis: A Systematic Review. *Education Sciences*, 15(7), 888. <https://doi.org/10.3390/educsci15070888>
9. Mo, F., **Huang, J.**, Yang, Y., Özen, Z., Maeda, Y., & Olenchak, F. R. (2025). Undergraduate Students' Learning Outcomes with ChatGPT: A Meta-Analytic Study. *Computers and Education: Artificial Intelligence*, 100536. <https://doi.org/10.1016/j.caeai.2025.100536>
10. Zheng, C., Liu, J., Li, Y., Xu, P., Zhang, B., Wei, R., Liu, B., & **Huang, J.** (2024). A 2PLM-RANK Multidimensional Forced-Choice Model and Its Fast Estimation Algorithm. *Behavior Research Methods*, 1–26. <https://doi.org/10.3758/s13428-023-02315-x>
11. Yang, X., **Huang, J.**, Chen, X., & Su, X. (2022). A Conceptual Analysis of Conceptual Understanding. *Exploring Education Development*, 20, 54–68. (in Chinese)
12. Li, Q., **Huang, J.**, & Xu, X. (2021). Relationship Between COVID-19 Infection Pneumonia and Traditional Chinese Medicinal Materials. *Chinese Journal of Medical Library and Information Science*, 30(01), 17–24. (in Chinese)
13. **Huang, J.**, & Xu, X. (2020). Research on the Influential Factors of Public Perception and Attitudes to COVID-19: Based on the Citizen Survey of Shanghai. *Library Journal*, 39(12), 98–106. (in Chinese)
14. Xu, X., & **Huang, J.** (2020). Research on Executives' Risk Perception and Behavior Choice to COVID-19. *Library Journal*, 39(12), 117–127. (in Chinese)

BOOK CHAPTERS

1. Zhang, Y. X., **Huang, J.**, & Chang, H.-H. (2025). Innovative Computerized Test Items. In *Encyclopedia of Social Measurement*. Elsevier. <https://doi.org/10.1016/B978-0-443-26629-4.00043-5>
2. Wang, S., **Huang, J.**, & Chang, H.-H. (2026). Computerized Adaptive Testing for STEM Learning. In *Artificial Intelligence for STEM Education Research: Advanced Methods and Applications* (pp. 87–111). Cham: Springer Nature Switzerland. https://doi.org/10.1007/978-3-032-06565-0_5

CONFERENCE PRESENTATIONS

1. Wang, T., Yang, X. D., & **Huang, J.** (2026, April). A Mixture CDM for Mathematical Problem-Solving Strategies. *Annual Meeting of the National Council on Measurement in Education (NCME)*, Los Angeles, CA, USA.
2. **Huang, J.**, Zhang, Y. X., Wang, X. Y., & Chang, H.-H. (2026, April). Optimizing Cognitive Diagnosis CAT: Addressing Practical Challenges through Psychometric Innovation. *Annual Meeting of the American Educational Research Association (AERA)*, Los Angeles, CA, USA.

3. **Huang, J.**, Zhang, J. H., & Chang, H.-H. (2026, April). LLM-Enhanced Automated Item Content Analysis Supporting CAT Applications. *Annual Meeting of the American Educational Research Association (AERA)*, Los Angeles, CA, USA.
4. **Huang, J.**, & Chang, H.-H. (2025, November). Generative AI-Enhanced Cognitive Design System Approach to Automatic Item Generation. *Purdue AI in P-12 Education Conference*, West Lafayette, IN, USA.
5. **Huang, J.**, & Chang, H.-H. (2025, July). Bridging Psychometrics and Generative AI: Automatic Item Generation for Verbal Analogical Reasoning. *International Meeting of the Psychometric Society (90th Annual Meeting)*, Minneapolis, MN, USA.
6. **Huang, J.**, Zhang, Y. X., Morphew, J. W., Nissen, J. M., Van Dusen, B., & Chang, H.-H. (2025, April). CD-CAT Online Item Calibration with Practical Constraints. *Annual Meeting of the National Council on Measurement in Education (NCME)*, Denver, CO, USA.
7. **Huang, J.**, Zhang, Y. X., & Chang, H.-H. (2024, November). Two-phase Content-balancing CD-CAT Online Item Calibration. *Ideas in Testing Research*, Chicago, IL, USA.
8. **Huang, J.**, Xin, Y. P., & Chang, H.-H. (2024, November). Machine Learning to Educational Process Data Analysis: A Systematic Review. *Purdue AI in P-12 Education Conference*, West Lafayette, IN, USA.
9. **Huang, J.**, Yang, T., & Yang, X. (2024, April). Taking a “Whole” Perspective: Exploring the Influence of Individual and Environmental Factors on Creative Performance. Roundtable, *Annual Meeting of the American Educational Research Association (AERA)*, Philadelphia, PA, USA.
10. **Huang, J.**, & Yang, X. (2022, April). Model-based Approaches to Classifying Students into Competence-based Proficiency Levels. Poster, *Annual Meeting of the American Educational Research Association (AERA)*, San Diego, CA, USA.

EXPERIENCE

Psychometric Research Intern — NCCPA Jun. 2026 – Present
National Commission on Certification of Physician Assistants

- Support psychometric research on assessment quality, test security, and data-driven monitoring for certification examinations.

Graduate Teaching Assistant — Purdue University Aug. 2025 – Present
College of Education West Lafayette, USA

- EDPS 32700 Classroom Assessment (Dr. Anne Traynor).

Graduate Research Assistant — Purdue University Aug. 2024 – Jul. 2025
School of Engineering Education West Lafayette, USA

- Developed, maintained, and refined CD-CAT algorithms; conducted simulation studies.
- Performed psychometric analyses on operational datasets.

Research Assistant — NSF Grant No. 2141847 Dec. 2023 – Present
Purdue University West Lafayette, USA

- Lead CD-CAT parameter estimation and item-selection optimization.
- Lead online calibration and CAT tuning procedures.
- Support mathematics cognitive-diagnosis development and psychometric refinement, and [LASSO](#)-platform data analysis.

Volunteer Consultant — Psychometric Investigation Laboratory Dec. 2023 – Present
Purdue University West Lafayette, USA

- Advise on statistical methods, research design, and data management.
- Deliver the *Using Machine Learning to Analyze Educational Data* workshop series.

Research Assistant — East China Normal University
Suzhou Micro-Monitoring Project; “13th Five-Year Plan” Project

Apr. 2021 – Jun. 2023
Shanghai, China

- Modeled creativity data from 4,833 students across 48 schools using Rasch analysis and multilevel models.
- Analyzed teacher–student interactions from classroom video data.

Research Assistant — Chinese Hospital Association & ECNU
Clinical Pharmacist Training Evaluation

Jul. 2021 – Sep. 2021
Shanghai, China

- Analyzed student-satisfaction factors using ordinal logistic regression.

Research Assistant — Surveys and Data Center, ECNU
Quality-of-Life Survey Studies

Sep. 2019 – Jun. 2020
Shanghai, China

- Analyzed and cleaned large-scale survey data; co-authored two journal papers.

WORKS IN PROGRESS

1. **Huang, J., & Cheng, M.-M.** A Two-Stage Framework Integrating Psychometric Modeling and Process Data for Interpretable DIF Detection.