

# HE REN

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## EDUCATION

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- Exp. Jun. 2027*      **PhD Measurement & Statistics**  
University of Washington (UW). Seattle, WA, United States  
*Advisor: Chun Wang, PhD*
- Jun. 2022*      **MEd Psychology**  
Beijing Normal University (BNU). Beijing, China  
*Thesis Title: New termination rule for multcategory multidimensional computerized classification testing: From the perspectives of psychometrics and machine learning*
- Jun. 2019*      **BS Statistics**  
Beijing Normal University (BNU). Beijing, China

## INTERESTS

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I am committed to the development and improvement of quantitative educational measurement methods and am always excited by the potential contribution that accurate measurement can make to educational equity. My research interests focus on Multidimensional Item Response Theory (MIRT), Differential Item Functioning (DIF), Computerized Adaptive Testing (CAT), and the application of machine learning in psychometrics.

## EXPERIENCE

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- Jun. 2023 – Present*      **Center for Social Science Computation and Research, University of Washington**  
Seattle, WA, United States  
*Statistical Consultant*      *Supervisor: Jerald Herting, PhD*
- Instructed workshops on introductory R for faculty and students
  - Provided statistical and computation consulting services 80 hours per month to improve the research of faculty and students
- Sep. 2022 – Jun. 2023*      **College of Education, University of Washington**  
Seattle, WA, United States  
*Research Assistant*      *Project: HOPE: Achieving home discharge for institutionally bound patients with PROMs, AI, and the HER*  
*PI: Andrea Cheville, MD & Chun Wang, PhD*      Funded by National Institute of Health
- Cleaned a big clinic dataset with over 10 million records and conducted descriptive statistics
  - Handled the missingness and sampling weights in the dataset with multiple advanced statistical methods
  - Selected the most important variables on patients' discharge positions by regularization methods
- May. 2022 – Jul. 2023*      **ByteDance Ltd.**  
Beijing, China  
*Psychometrician (Internship)*
- Conducted descriptive statistics, data visualization, and results interpretation
  - Identified the items in which the difficulty parameters were abnormally labeled through quantitative analysis
  - Simulated item recommendation rules and adjusted the recommendation rules based on the simulation results

Sep. 2020 – Jan. 2021 **Beijing Normal University**

Beijing, China

Teaching Assistant Course: *Adaptive testing and diagnostic adaptive assessment*

(Awarded as

Excellent TA)

- Undertook the task of introducing R
- Tutored 18 graduate students in remedial courses on the fundamentals of statistics.
- Corrected homework assignments weekly

Jun. 2019 – Aug. 2019 **National Assessment Center for Education Quality**

Beijing, China

Research Assistant Project: *Vertical linking based on large-scale assessment projects in China*

PI: Ping Chen, PhD

Funded by Chinese Testing International Co., Ltd.

- Participated in the research on test equating design and methods.
- Helped with programming for Monte Carlo simulation programs to compare different equating methods
- Assisted in creating research presentation posters and slides

## PUBLICATIONS

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Huang, Y., **Ren, H.**, & Chen, P. (2023). Item selection methods with exposure and time control for computerized classification test. *British Journal of Mathematical and Statistical Psychology*, 76(1), 52–68.

<https://doi.org/10.1111/bmsp.12281>

Chen, P., Li, X., **Ren, H.**, & Xin, T. (2023). Influence factors of cross-test-cycles linking: A modified single group design (in Chinese). *Journal of Psychological Science*, 46(4), 960–970. <https://doi.org/10.16719/j.cnki.1671-6981.202304025>

**Ren, H.**, Huang, Y., & Chen, P. (2022). Types, characteristics, and application of termination rules in computerized classification testing (in Chinese). *Advances in Psychological Science*, 30(5), 1168–1182.

<https://doi.org/10.3724/SP.J.1042.2022.01168>

**Ren, H.**, Xu, N., Lin, Y., Zhang, S., & Yang, T. (2021). Remedial teaching and learning from a cognitive diagnostic model perspective: Taking the data distribution characteristics as an example. *Frontiers in Psychology*, 12, Article 628607. <http://doi.org/10.3389/fpsyg.2021.628607>

**Ren, H.**, & Chen, P. (2021). Two new termination rules for multidimensional computerized classification testing (in Chinese). *Acta Psychologica Sinica*, 53(9), 1044–1058. <https://doi.org/10.3724/SP.J.1041.2021.01044>

## PRESENTATIONS

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**Ren, H.**, & Wang, C. (2024, April). *Variable selection and binary prediction with incomplete data: Balance between fairness and precision*. Presented at the Annual Meeting of the American Educational Research Association (AERA), Philadelphia, PA.

**Ren, H.**, Wang, C., Li, M., & Parker, M. (2024, April). *Detecting intersectional differential item functioning: A comparison of two methods*. Presented at the Annual Meeting of the American Educational Research Association (AERA), Philadelphia, PA.

**Ren, H.**, Wang, C., & Sanders, E.A. (2024, April). *Modeling between- and within-person response time-response dependency: A comparison between two approaches*. Presented at the Annual Meeting of the National Council on Measurement in Education (NCME), Philadelphia, PA.

Parker, M., **Ren, H.**, Li, M., & Wang, C. (2024, March). *Intersectional biases within an introductory computing assessment*. Paper presented at the 55th ACM Technical Symposium on Computer Science Education (SIGCSE' 24), Portland, OR.

Huang, Y., **Ren, H.**, & Chen, P. (2022, April). *New item selection designs for computerized classification test*. Poster presented at the Annual Meeting of the National Council on Measurement in Education (NCME), San Diego, CA (Online).

**Ren, H.**, & Chen, P. (2020, April). *Research on termination rules of multidimensional computerized classification testing*. Poster presented at the Annual Meeting of the National Council on Measurement in Education (NCME), Online.

## FUNDED GRANTS

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2019 – 2020	<b>2019 Independent Project grant (Grant No. BJZK-2019A2-19003)</b>	<b>~\$1,000</b>
<i>Principal Investigator</i>	Funded by Collaborative Innovation Center of Assessment for Basic Education Quality, Beijing Normal University <i>Project: Computerized classification test: Personalized classification test in the era of big data</i>	
2017 – 2018	<b>2017 Beijing College Students' Innovation Training Program grant.</b>	<b>~1,500</b>
<i>Principal Investigator</i>	Funded by School of Statistics, Beijing Normal University <i>Project: Analysis and intervention on the mastery of data distribution characteristics of eighth graders based on cognitive diagnosis model</i>	

## AWARDS/HONORS

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2022	Outstanding Graduate of Beijing
2021	China National Scholarship
2020	The First Prize Scholarship of Beijing Normal University
2020	Meritorious Winner in the Interdisciplinary Contest in Modeling (ICM; As Student Advisor)
2019	Outstanding Graduate of Beijing
2018	Merit Student of Beijing (Top 1%)
2017	Honorable Mention in the Interdisciplinary Contest in Modeling (ICM; As Team Member)

## COMPUTING SKILLS

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Proficient	R, SPSS
Good	SQL, MATLAB, Python, SAS, Stata

## SERVICE

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### Reviewer

2022 – Now	Journal of Educational Measurement
2023	National Council on Measurement in Education (NCME) Annual Meeting 2024
2023	American Educational Research Association (AERA) Annual Meeting 2024
2023	55th ACM Technical Symposium on Computer Science Education (SIGCSE' 24)

### Volunteer

2022	Press-Tribune Assistant at Beijing 2022 Olympic Winter Games
2019	Voluntary support education in No. 2 Middle School of Fenggang (a remote county in southwest China)