

# Yingbin Zhang

Email: [yingbin2@illinois.edu](mailto:yingbin2@illinois.edu)

Website: <https://yingbinzhang.netlify.app/>

## Research interest

Educational Data Mining, Learning Analytics, Sequential Analysis, Self-regulated Learning, Computer Science Education, Psychological and Educational Measurement

## Education

|              |                            |   |                |
|--------------|----------------------------|---|----------------|
| <b>Ph.D.</b> | Curriculum and Instruction | <i>University of Illinois at Urbana-Champaign</i> | 2018 – present |
| <b>M.A.</b>  | Educational Measurement    | <i>Beijing Normal University</i>                  | 2015 – 2018    |
| <b>B.S.</b>  | Applied Psychology         | <i>Zhengzhou University</i>                       | 2011 – 2015    |

## Professional Experience

### *Research*

|                 |                           |   |
|-----------------|---------------------------|---|
| 08/2020–present | <b>Research Assistant</b> | Combining human judgment and data-driven approaches for the development of interpretable models of student behaviors: Applications to computer science education. NSF project. University of Illinois at Urbana-Champaign |
| 08/2018–05/2021 | <b>Research Assistant</b> | Using Data Mining and Observation to Derive an Enhanced Theory of SRL in Science Learning Environments. NSF project. University of Illinois at Urbana-Champaign   |
| 10/2016–06/2018 | <b>Research Assistant</b> | Assessment of Children’s Learning and Development in Child-Friendly Schools Project, Collaborative Innovation Center of Assessment for Basic Education Quality (CICA-BEQ), Beijing Normal University                      |
| 03/2016–03/2017 | <b>Research Assistant</b> | Item Position Effects in Educational Assessment Project, CICA-BEQ, Beijing Normal University  |
| 02/2016–08/2016 | <b>Research Assistant</b> | Evaluation of Education Quality of Primary and Secondary Schools in Mengtougou District Project, Faculty of Education, Beijing Normal University  |

### *Teaching*

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|-----------------|---------------------------|--|
| 09/2016–01/2017 | <b>Teaching Assistant</b> | Regression Analysis, CICA-BEQ, Beijing Normal University |
|-----------------|---------------------------|--|

## Reviewing

### Journal

Education and Information Technologies 2022

### Conference

The 15th International Conference on Educational Data Mining (EDM'22)  
 The 2022 Annual Meeting of the Cognitive Science Society (CogSci'22)  
 The 53th ACM Technical Symposium on Computer Science Education (SIGCSE '22)  
 The 2022 American Educational Research Association (AERA) Annual Meeting  
 The 2021 Learning Sciences Graduate Student Conference (LSGSC)  
 The 2020 National Council on Measurement in Education (NCME) Annual Meeting

## Others

07/2016–09/2016 **Data Analyst** National Assessment of Education Quality Project, CICA-BEQ, Beijing Normal University

## Publications

### Journal Articles

- Zhang, Y.**, Paquette, L., Baker, R. S., Bosch, N., Ocumpaugh, J., & Biswas, G. (Accepted). How are feelings of difficulty and familiarity linked to learning behaviors and gains in a complex science learning task? *European Journal of Psychology of Education*.
- Zhang, Y.**, Paquette, L., Bosch, N., Ocumpaugh, J., Biswas, G., Hutt, Stephen., & Baker, R. S. (Accepted). The evolution of metacognitive strategy use in an open-ended learning environment: Do prior domain knowledge and motivation play a role? *Contemporary Educational Psychology*.
- Zhang, Y.**, Paquette, L., Baker, R. S., Ocumpaugh, J., Bosch, N., Biswas, G., & Munshi, A. (2021). Can strategic behavior facilitate confusion resolution? The interplay between confusion and metacognitive strategies in Betty's Brain. *Journal of Learning Analytics*, 8(3), 28-44. <https://doi.org/10.18608/jla.2021.7161>
- Zhang, Y.**, & Wang, Y. (2020). Validity of three IRT models for measuring and controlling extreme and midpoint response styles. *Frontiers in Psychology*, 11, 271. <https://doi.org/10.3389/fpsyg.2020.00271>
- Zhang, Y.**, & Wang, Y. (2019). The methods for measuring and controlling response styles. *Journal of Psychological Science*, 42(3), 747 – 758. <https://doi.org/10.16719/j.cnki.1671-6981.20190334>
- Wang, Y., Yang, Z., **Zhang, Y.**, Wang, F., Liu, T., & Xin, T. (2019). The effect of social-emotional competency on child development in western China. *Frontiers in Psychology*, 10, 1282. <https://doi.org/10.3389/fpsyg.2019.01282>
- Wang, Y., Ma, X., **Zhang, Y.**, Wu, L., Yang, T., & Li, Y. (2019). The relationship of physical education curriculum implementation and mathematics achievement in Chinese youth. *Research Quarterly for Exercise and Sport*, 90(2), 133-140. <https://doi.org/10.1080/027>
- Nie, X., Chen, P., **Zhang, Y.**, & He Y. (2018). Item position effects: conceptualization, detection and developments. *Advances in Psychological Science*, 26(2), 368–380. <https://doi.org/10.3724/SP.J.1042.2018.00368>

Wang, Y., **Zhang, Y.**, & Xin T. (2018). The effect of parents' educational aspirations on children's mathematics achievement: Analysis of the multiple mediation effects. *Studies of Psychology and Behavior*, 16(1), 96–102. <http://www.xml-data.org/XYXWYJ/html/2018/1/2018-1-96.html>

Wang, Y., **Zhang, Y.**, Yang, T., & Xin, T. (2017). Applications and implications of test equating in large-scale international educational assessments. *China Examinations*, (8), 43–49. <https://doi.org/10.19360/j.cnki.11-3303/g4.2017.08.008>

### *Peer-reviewed Conference Paper*

Pinto, J. D., **Zhang, Y.**, Paquette, L., Fan, A. X. (2021). Investigating Elements of Student Persistence in an Introductory Computer Science Course. In Proceedings of the CSEDM Workshops at the International Conference on Educational Data Mining 2021 CEUR Workshop Proceedings. Virtual, Online. <http://ceur-ws.org/Vol-3051/CSEDM2.pdf>

Bosch, N., **Zhang, Y.**, Paquette, L., Baker, R., Ocumpaugh, J., & Biswas, G. (2021). Students' verbalized metacognition during computerized learning. In *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems (CHI'21)* (pp. 680:1-680:12). ACM, Yokohama, Japan. <https://doi.org/10.1145/3411764.3445809>

Paquette, L., Grant, T., **Zhang, Y.**, Biswas, G., & Baker, R. (2021). Using epistemic networks to analyze self-regulated learning in an open-ended problem-solving environment. In Ruis A.R., Lee S.B. (eds), *Advances in Quantitative Ethnography. ICQE 2021. Communications in Computer and Information Science, vol 1312*. (pp. 185-201). Springer, Cham. [https://doi.org/10.1007/978-3-030-67788-6\\_13](https://doi.org/10.1007/978-3-030-67788-6_13).

**Zhang, Y.**, Paquette, L., Baker, R., Ocumpaugh, J., Bosch, N., Munshi, A., & Biswas, G. (2020). The relationship between confusion and metacognitive strategies in Betty's Brain. In *Proceedings of the 10th International Conference on Learning Analytics & Knowledge (LAK'20)* (pp. 276-284). ACM, Frankfurt, Germany. <https://doi.org/10.1145/1234567890>

### *Peer-reviewed Presentation*

**Zhang, Y.**, & Paquette, L. (2021). Mining sequential patterns with high usage variation. Poster presented at the 14th International Conference on Educational Data Mining (EDM '21). (Fully virtual conference)

**Zhang, Y.**, & Paquette, L. (2020). An effect-size-based temporal interestingness metric for sequential pattern mining. Poster presented at the 13th International Conference on Educational Data Mining (EDM '20). (Fully virtual conference)

**Zhang, Y.**, & Liu, T. (2019). Using person-fit statistics to detect response styles. Poster presented at the National Council on Measurement in Education Annual Meeting, Toronto, Canada.

Yang, Z., **Zhang, Y.**, & Wang, Y. (2019). The impact of extreme response style on the result of mean comparison. Poster presented at the National Council on Measurement in Education Annual Meeting, Toronto, Canada.

## Professional Skills

**Data analysis:** Statistical analysis, machine learning, data mining, psychometrics

**Software:** Python, R, SPSS, Mplus

## Honors and Awards

|   |             |
|---|-------------|
| UIUC Graduate College Conference Travel Award                           | 2021, 2022  |
| Erik Duval Travel Scholarship for Learning Analytics Summer Institute   | 2021        |
| UIUC College of Education 11th Annual Graduate Student Conference Award | 2020        |
| UIUC College of Education Hong Kong Graduate Student Exchange Award     | 2019        |
| Chinese Government Scholarship  | 2018 - 2022 |

Last updated: March 29, 2022