

Wanjing Anya Ma

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wanjing-any-ma

Education

- 2021 – 2026 **Ph.D., Stanford University** Learning Sciences and Technology Design
Advisors: *Jason Yeatman, Nick Haber, Ben Domingue*
Ph.D. Minor, Stanford University Computer Science
- 2018 – 2019 **M.S., University of Pennsylvania** Learning Sciences and Technologies
Advisor: *Ryan Baker*
- 2016 – 2018 **B.S., New York University** Computer Science
B.S., New York University Teaching Chemistry 7-12
- 2014 – 2015 **Boston University** Computer Science

Research Interests

- Computerized Adaptive Testing
- Natural Language Processing
- Adaptive Experimentation
- Human-centered AI Applications
- Learning Differences
- Foundational Models for Assessments

Professional Experiences

- 2024 **Ida Lawrence Research Intern**, ETS Research Institute, NJ
Project: Automatic Item Generation of Reading Comprehension Items
Mentors: *Michael Flor, Zuowei Wang*
- 2019 – 2021 **Chemistry Subject Expert Teacher**, BASIS Independent Brooklyn, NY

Publications

* indicates equal first-author contributions

Journal Articles

1. Gijbels, L., Burkhardt, A., **Ma, W. A.**, & Yeatman, J. D. (2024). Rapid online assessment of reading and phonological awareness (roar-pa). *Scientific Reports*, 14(1), 10249.

Conference Proceedings

1. Tan, A. W. M., Yu, S., Long, B., **Ma, W. A.**, Murray, T., Silverman, R. D., Yeatman, J. D., & Frank, M. C. (2024). Devbench: A multimodal developmental benchmark for language learning. *Advances in Neural Information Processing Systems*. <https://doi.org/https://arxiv.org/abs/2406.10215>
2. Zelikman, E., * **Ma, W. A.**, * Tran, J., Yang, D., Yeatman, J., & Haber, N. (2023). Generating and evaluating tests for k-12 students with language model simulations: A case study on sentence reading efficiency. *Proceedings of the 2023 Conference on Empirical Methods in Natural Language Processing*, 2190–2205. <https://doi.org/10.18653/v1/2023.emnlp-main.135>
3. Matuk, C., **Ma, W.**, Sharma, G., & Linn, M. (2019). The lifespan and impact of students' ideas shared during classroom science inquiry. *Proceedings of the 13th Annual International Conference for Computer Supported Collaborative Learning. Lyon: International Society for the Learning Sciences.*, 49–56.
<https://par.nsf.gov/servlets/purl/10180393>

4. **Ma, W.** (2017). A computer tool that will allow secondary science teachers to differentiate reading materials for students with varied reading abilities. *Proceedings of the 116th annual convention of the School Science and Mathematics Association*, 14–21.
<https://www.ssma.org/assets/Proceedings/Proceedings2017FINALWeb.pdf#page=15>

Preprints

1. Bhat, K. G., Mogan, A. D., Saavedra, A., Fuentes-Jimenez, M., Siebert, J. M., **Ma, W. A.**, Townley-Flores, C., Richie-Halford, A., Wilkey, E. D., & Yeatman, J. (2024). Shared and unique influences of phonological processing on reading and math. <https://doi.org/10.31219/osf.io/em3bg>
2. He-Yueya, J., **Ma, W. A.**, Gandhi, K., Domingue, B. W., Brunskill, E., & Goodman, N. D. (2024). Psychometric alignment: Capturing human knowledge distributions via language models.
<https://arxiv.org/abs/2407.15645>
3. **Ma, W. A.**, Richie-Halford, A., Burkhardt, A., Kanopka, K., Chou, C., Domingue, B., & Yeatman, J. D. (2023a). Roar-cat: Rapid online assessment of reading ability with computerized adaptive testing. *PsyArXiv*. <https://osf.io/preprints/psyarxiv/7tpx2>
4. Tran, J. E., * Yeatman, J., * Burkhardt, A., **Ma, W. A.**, Mitchell, J., Yablonski, M., Gijbels, L., Townley-Flores, C., & Richie-Halford, A. (2023). Development and validation of a rapid online sentence reading efficiency assessment. <https://osf.io/preprints/osf/u3mjz>

Open Software

1. **Ma, W. A.**, Yeatman, J. D., & Richie-Halford, A. (2023). Jscat: Computer adaptive testing in javascript [Open-source software]. <https://github.com/yeatmanlab/jsCAT>

Presentations

Invited Talks

1. Zelikman, E., * **Ma, W. A.**, * Tran, J., Yang, D., Yeatman, J., & Haber, N. Generating and evaluating tests for k-12 students with language model simulations: A case study on sentence reading efficiency. In: HAI: AI+Education Summit: AI in the Service of Teaching Learning. 2024.

Conference Presentations

1. Long, B., **Ma, W. A.**, Silverman, R., Yeatman, J., & Frank, M. C. Developmental changes in the precision of visual concept knowledge. In: Vision Science Society. 2024.
2. Tran, J. E., **Ma, W. A.**, Burkhardt, A., T., M., Wentzlof, K., Ungashe, A., Fuentes-Jimenez, M., Stone, H., Mitchell, J., Yablonski, M., Gijbels, L., Richie-Halford, A., Townley-Flores, C., & Yeatman, J. D. Improving the efficiency of silent reading measure through timing analyses and automatic ai test generation. In: NCME Special Conference on Classroom Assessment. 2024.
3. **Ma, W. A.**, Burkhardt, A. K., & Yeatman, J. D. Exploring parameter invariance for adaptively assessing reading among students with learning differences. In: Annual Meeting of the National Council on Measurement in Education. 2023.
4. **Ma, W. A.**, Richie-Halford, A., Burkhardt, A., Kanopka, K., Chou, C., Domingue, B., & Yeatman, J. D. Roar-cat: Rapid online assessment of reading ability with computerized adaptive testing. In: International Meeting of the Psychometric Society. 2023.
5. Tran, J. E., **Ma, W. A.**, Gijbels, L., Townley-Flores, C., Siebert, J., Tran, J. E., Murray, T., Fuentes-Jimenez, M., Ramamurthy, M., Richie-Halford, A., & Yeatman, J. D. Rapid online assessment of reading (roar): A platform for developmental cognitive neuroscience research at an unprecedented scale. In: Flux Congress. 2023.

6. Kirch, S. A., Sabouri, P., Zhang, M., & **Ma, W.** Theory-based design of tools for analyzing learning in educational environments. In: National Association for Research in Science Teaching Annual International Conference. 2019.
7. **Ma, W.**, Kirch, S. A., Sabouri, P., & Zhang, M. Understanding students' dialogic learning experience in an emergent transformative science classroom. In: National Association for Researching Science Teaching Annual International Conference. 2019.

Awards and Fellowships

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| 2023 | Distinguished Poster Award , International Meeting of Psychometrics Society
Stanford Interdisciplinary Graduate Fellowship , Stanford University |
| 2019 | Best Paper Nomination , International Conference on Computer Supported Collaborative Learning |
| 2018 | Merit-Based Scholarship , University of Pennsylvania
Letha Hurd Morgan Award , New York University
Honors in Science Education , New York University
Luke Hallenbeck Scholarship , New York University |
| 2017 | John Park Graduate Student Convention Travel Award , School Science and Mathematics
Undergraduate Student Spotlight , New York University Courant Computer Science |

Graduate Teaching Experiences

Stanford University

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| 2024 | EDUC 252: Introduction to Psychometrics
Teaching Assistant |
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Professional Activities

Certificates

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| 2018 – 2023 | Chemistry Initial Certificate 7–12 with 5–6 Extension, New York State Education Department |
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Professional Memberships

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| 2023 – | Associations for Computational Linguistics (ACL) |
| 2022 – | National Council on Measurement in Education (NCME) |
| 2023 – | Psychometric Society (IMPS) |

Service to Field

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| Reviewer | National Council on Measurement in Education 2023
National Council on Measurement in Education 2024
NeurIPS 2024 Workshop Large Foundation Models for Educational Assessment |
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Programming Skills

Python, R, JavaScript, HTML, Java, C, and TypeScript