Wanjing Anya Ma

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Education

Stanford University   *Stanford, CA*
PHD LEARNING SCIENCES AND TECHNOLOGY DESIGN   *2021 - Expected 2026*
- Concentration: Developmental and Psychological Sciences
- Advisors: Dr. Jason Yeatman, Dr. Nick Haber, Dr. Ben Domingue

University of Pennsylvania   *Philadelphia, PA*
MSED LEARNING SCIENCES AND TECHNOLOGIES   *2018 - 2019*
- Advisor: Dr. Ryan Baker
- Master's Thesis: *A literature review to compare natural language processing with critical discourse analysis in understanding students' science practices*

New York University   *New York, NY*
BA COMPUTER SCIENCE & BS TEACHING CHEMISTRY 7-12 WITH HONORS   *2015 - 2018*
- Advisors: Dr. Susan Kirch, Dr. Robert Wallace, Dr. Camillia Matuk
- Honors' Thesis: *Understanding students' dialogic learning experience in an emergent transformative science classroom*

Boston University   *Boston, MA*
MAJOR IN COMPUTER SCIENCE & GENERAL SCIENCE EDUCATION   *2014 - 2015*

Research Interests

Dyslexia, Special Education, Applied Psychometrics, Human-Computer Interaction, Natural Language Processing

Awards, Fellowships, & Grants

2023	**Distinguished Poster Award**, International Meeting of Psychometrics Society	*$ 500*
	Stanford Interdisciplinary Graduate Fellowship (SIGF), Stanford University	*$ 158,760*
2019	**Best Paper Nomination**, 13th International Conference on Computer Supported Collaborative Learning	
2018	**Merit-Based Scholarship**, University of Pennsylvania Graduate School of Education	*$ 5,000*
	Letha Hurd Morgan Award, NYU Steinhardt, a graduation award in recognition of outstanding scholastic attainment and service to their department and school, one scholar per graduating class	*$ 300*
	Luke Hallenbeck Scholarship, NYU	*$ 5,000*
	Honors in Science Education, NYU Steinhardt Department of Teaching and Learning	
2017	**John Park Graduate Student Convention Travel Award**, School Science and Mathematics	*$ 400*
	Undergraduate Student Spotlight, NYU Courant Computer Science	

Publications

*These authors contributed equally to this work

JOURNAL PAPERS

Tran, J. E.*, Yeatman, J. D.*, Burkhardt, A., **Ma, W. A.**, Mitchell, J., Yablonski, M., Townley-Flores, C., Richie-Halford, A. (2023, December 1). Development and validation of a rapid online sentence reading efficiency assessment. https://doi.org/10.31219/osf.io/u3mjz

Ma, W. A., Richie-Halford, A., Burkhardt, A., Kanopka K., Chou, C., Domingue, B., Yeatman, J. D. (2023). ROAR-CAT: Rapid Online Assessment of Reading ability through computerized adaptive testing. https://osf.io/preprints/psyarxiv/7tpx2/

Gijbels, L., Burkhardt, A., **Ma, W. A.**, & Yeatman, J. D. (2023, February 11). Rapid Online Assessment of Reading and Awareness (ROAR-PA). https://doi.org/10.31234/osf.io/5z2gh

PEER-REFEREED CONFERENCE PROCEEDINGS

Zelikman, E.*, **Ma, W. A.***, Tran, J. E., Yang, D., Yeatman, J. D., Haber, N. (2023). Generating and Evaluating Tests for K-12 Students with Language Model Simulations: A Case Study on Sentence Reading Efficiency. [Oral Presentation] 2023 Conference on Empirical Methods in Natural Language Processing, EMNLP. https://arxiv.org/abs/2310.06837

Matuk, C., **Ma, W.**, Sharma, G., Linn, M. C. (2019). The Lifespan and impact of students' ideas shared during classroom science inquiry. In K. Lund, G. P. Niccolai, E. Lavoué, C. E. Hmelo-Silver, G. Gweon, M. Baker (Eds.), A Wide Lens: Combining Embodied, Enactive, Extended, and Embedded Learning in Collaborative Settings, 13th International Conference on Computer Supported Collaborative Learning (CSCL) 2019 (Vol. 1, pp. 49-56). Lyon, France: International Society of the Learning Sciences. ***Best Paper Nomination***

Ma, W. (2017). A computer tool that will allow secondary science teachers to differentiate reading materials for students with varied reading abilities. In M. J. Mohr-Schroeder J. N. Thomas (Eds.), Proceedings of the 116th Annual Convention of the School Science and Mathematics Association (Vol. 4, pp. 14-21).

REFEREED CONFERENCE PRESENTATIONS

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. (2023). Rapid Online Assessment of Reading (ROAR): A platform for developmental cognitive neuroscience research at an unprecedented scale [Poster]. Flux Congress, Santa Rosa, CA, United States.

Ma, W. A., Richie-Halford, A., Burkhardt, A., Kanopka K., Chou, C., Domingue, B., Yeatman, J. D. (2023). ROAR-CAT: Rapid Online Assessment of Reading ability through computerized adaptive testing [Poster]. International Meeting of Psychometric Society 2023, Maryland, the USA. ***Distinguished Poster Award***

Ma, W. A., Burkhardt, A. K., Yeatman, J. D. (2023). Exploring parameter invariance for adaptively assessing reading among students with learning differences [eBoard]. National Council on Measurement in Education Annual Meeting 2023, Chicago, the USA.

Ma, W., Kirch, S. A., Sabouri, P., Zhang, M. (2019). Understanding students' dialogic learning experience in an emergent transformative science classroom [Poster]. National Association for Researching Science Teaching Annual International Conference 2019, Baltimore, the USA.

Kirch, S. A., Sabouri, P., Zhang, M., **Ma, W.** (2019). Theory-based design of tools for analyzing learning in educational environments [Conference presentation]. National Association for Research in Science Teaching Annual International Conference 2019. Baltimore, the USA.

SOFTWARE

jsCAT: Computer Adaptive Testing in JavaScript https://www.npmjs.com/package/@bdelab/jscat

Research Experience

Stanford University - Brain Development and Education Lab *Stanford, CA*
ADVISOR: DR. JASON YEATMAN *2021 - Present*
- Project: The Rapid Online Assessment of Reading
    - Develop, simulate and validate the adaptive version of a single-word-recognition task.
    - Build an open-source JavaScript library of computerized adaptive testing (jsCAT).
    - Co-develop the visual vocabulary assessment

University of Pennsylvania - Penn Center for Learning Analytics *Philadelphia, PA*
ADVISOR: DR. RYAN BAKER *2018 - 2019*
- Project: Linguistic Analysis and a Hybrid Human-Automatic Coach for Improving Math Identity
    - Built semantic spaces to model 5th-graders' math discourse in Reasoning Mind.
    - Conducted the stepwise regression to investigate relationships among students' math discourse, learning outcomes, and their math identity.

New York University - Riddle Lab *New York, NY*
ADVISOR: DR. CAMILLIA MATUK *2018 - 2019*
- Project: Mitosis Idea Manager in Web-Based Inquiry Environment (WISE)
    - Led qualitative and statistical data analysis of students' ideas sharing during the science inquiry.
    - Designed a topic modeling pipeline to build topic-specific features to evaluate students' science explanation.
    - Created visualizations of students' learning trajectory across the learning unit.

New York University - Dept of Teaching and Learning *New York, NY*
ADVISOR: DR. SUSAN KIRCH *2017 - 2018*
- Project: Children Being and Becoming Learner-Scientists: Inquiry Tools for Learning Cultures
    - Conducted literature review in learning theories, transformative practices, and discourse analysis. Co-designed instructional tools that help pre-service teachers better reflect learning processes.
    - Focused on following and interpreting children's dialogic learning experience when engaging in transformative scientific practices.

Graduate Teaching Experience

2024 Winter   **EDUC 252 Intro to Psychometrics, Teaching Assistant**

Professional Experience

BASIS Independent Brooklyn *Brooklyn, NY*
CHEMISTRY SUBJECT EXPERT TEACHER *2019 - 2021*
- Taught 6th-grade and 7th-grade chemistry classes
- Created engaging and rigorous curriculum infused with laboratory experiences and creative projects that meet both BASIS curriculum and the NGSS standards
- Coordinated and facilitated Creative Computing Club that engaged middle school students with Scratch

Service

Reviewer, National Council on Measurement in Education (NCME) 2024

Certificates

2018-2023   **Chemistry Initial Certificate 7–12 with 5–6 Extension**, New York State Education Department

Skills

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

Language: Mandarin Chinese (native), English (bilingual)

Outreach & Internships

2017   **Discovery Camp Curriculum Intern**, The Franklin Institute, Philadelphia, PA

2016 - 2017   **Girls Who Code Facilitator**, Leadership and Public Service High School, New York, NY

2016   **STEM Education Intern**, Pacific Science Center, Seattle, WA