Zhaohui Li

Curriculum vitae

Postdoctoral Associate, College of AI, Cyber and Computing, UT San Antonio
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Research interests

I develop natural language processing and multimodal AI methods for educational assessment, early literacy, and support for children and families. My research includes methods for deferring uncertain assessments to people, teacher-guided story generation, evaluation of instructional materials, and AI-supported parent coaching.

Academic and research appointments

UT San Antonio *Sep 2026–present*
Postdoctoral Associate, College of AI, Cyber and Computing. San Antonio, TX.

University at Buffalo *Aug 2024–Aug 2026*
Postdoctoral Associate, Institute for Artificial Intelligence and Data Science.
Mentor: Jinjun Xiong. AI Team Lead for the National AI Institute for Exceptional Education and the Center for Early Literacy and Responsible AI.

Penn State *2019–2024*
Graduate Research Assistant, Natural Language Processing Lab, Department of Computer Science and Engineering. Advisor: Rebecca J. Passonneau.

Baidu Research *Feb–Aug 2019*
Research Intern, Big Data Lab. Beijing, China. Mentor: Jun Huan.

Education

Penn State — Ph.D. in Computer Science *Aug 2019–May 2024*
Advisor: Rebecca J. Passonneau. Dissertation: *Automated and Semi-Automated Assessment of STEM Reasoning Questions*. Recipient of the Best Doctoral Dissertation in an AI-Related Discipline Award.

Nankai University — B.S. in Computer Science and Engineering *Aug 2012–Jun 2016*
Advisors: Jun Xu and Jie Liu. Thesis: *BDA: Big Data Analysis as a Service*.
Related software: Easy Machine Learning (EasyML).

Research support

Organization for Autism Research 2026–2027
Co-PI, *Study of Parent's AI Coach for Parent-Implemented Communication Interventions for Children with ASD*. Award: $50,000.

NSF AI Institute for Exceptional Education Award period: 2023–2027
Technical lead supporting Jinjun Xiong (Co-PI) during my Buffalo appointment. NSF #2229873; total institute award: $20 million.

IES Center for Early Literacy and Responsible AI Award period: 2024–2029
Technical lead supporting Jinjun Xiong (Co-PI) during my Buffalo appointment. IES #R305C240046; total center award: $10 million.

NSF IUSE Project CLASSIFIES 2023–2025
Contributor to NLP algorithms and technical proposal writing with Rebecca J. Passonneau (Co-PI). NSF #2236150; total award: $300,000.

Penn State Nittany AI Challenge 2023–2024
PI, AI-driven interactive e-books for children. Funding award: $5,000.

Research projects

Parent coaching and home intervention assessment *Since Nov 2024*
Research lead; collaboration with Jinjun Xiong and the National AI Institute for Exceptional Education. Developed the ASD-HI parent–child interaction dataset and multimodal assessment methods for home interventions. Work includes speech recognition, visual analysis, feedback generation, the PaiCoach platform, and parent–child user studies.

Early reading instruction and decodable books *Since Jan 2025*
AI technical lead; collaboration with X. Christine Wang and the Center for Early Literacy and Responsible AI. Develop the AI Reading Enhancer platform and personalized decodable books for K–2 readers. Work includes story text and illustration generation, and evaluation rubrics co-designed with literacy experts.

Embodied agents for children's AI literacy *Since Nov 2025*
Research lead; collaboration with Shiyan Jiang at the University of Pennsylvania. Develop multimodal language models for robotic reading companions, evaluate platforms for young children, and analyze home interaction data. Contributed to an NSF proposal on AI literacy, embodied learning, and computational thinking.

Evaluation of K–12 science instructional materials *Since Jul 2025*
Research lead; collaboration with Tingting Li and Peng He at Washington State University. Develop SciEval and AI methods for evaluating instructional materials. Work includes annotation of OpenSciEd lessons, human rater calibration, model training, evidence-based feedback, and related NSF proposal development.

LLM4Art: Art interpretation *Since Jul 2025*
Research lead; collaboration with Kyunghee Pyun at the Fashion Institute of Technology, State University of New York. Develop an art interpretation prototype, curate and annotate an art dataset, and train and evaluate language models for interpretive reasoning and art education.

LLM4Simulation: Dyslexia simulations *Since Jan 2025*
Research lead; collaboration with Xinxia Li at George Washington University. Review dyslexia simulation technologies and develop interactive activities for special-education training. Work explores language models, virtual reality, evaluation, and related NSF proposal development.

Teaching and invited talks

Natural Language Processing (CSE 597), Penn State Spring 2020
Teaching assistant, graduate course. Teaching, grading, and student project support.

Artificial Intelligence (CMPSC 442), Penn State Fall 2019
Teaching assistant, undergraduate course. Teaching, grading, and exams for 100+ students.

NSF Argumentation Workshop, PACE Lab, Illinois State University Feb 2022
Invited speaker on AI-assisted assessment and large language models.

Professional service

Proposal review: NSF panelist, Division of Research on Learning.
Paper review: ACL Rolling Review, AAAI, AIED, SIGIR.
Program committee and session chair: AIED 2025 and AIED 2026.
Student volunteer: AAAI 2019.

Honors and awards

2024 — Best Doctoral Dissertation in an AI-Related Discipline Award, Penn State.
2023 — Nittany AI Challenge funding award, Penn State ($5,000).
2018 — Best Paper Nominee, China Conference on Information Retrieval.
2016 — Best Demo Paper Nominee, ACM CIKM.
2014–2015 — Nankai University Fellowship.

Publications and research outputs

2026–2024

1. Akemoğlu, Y.; **Li, Z.**; Zheng, Q.; Roberts, E. B.; Singh, S. P.; Xiong, J. (2026). Parent's AI Coach (PaiCoach): A Single-Case Experimental Study of an AI-Supported Parent Coaching System for Autistic Children. *Journal of Autism and Developmental Disorders. Published online September 11, 2026*. DOI.

2. Xiao, F.; **Li, Z.**; Jiang, S.; Xiong, J. (2026). Design and Feasibility of an LLM-Powered Humanoid Robot as a Reading Companion to Support Children's AI Literacy. *AIED 2026. Companion proceedings, pp. 498–504*. DOI.

3. **Li, Z.**; He, P.; Chen, Z.; Liu, H.; Wang, Z.; Li, T.; Xiong, J. (2026). SciEval: A Benchmark for Automatic Evaluation of K–12 Science Instructional Materials. *AIED 2026, pp. 539–554*. DOI.

4. Li, N.; Liu, D.; Hu, Y.; Xu, C.; Chao, S.; **Li, Z.**; Xiong, J. (2026). LLM4Art: Using Large Language Models for Art Interpretation. *LAK 2026 Companion Proceedings, pp. 246–248. Poster paper*. Proceedings PDF.

5. He, P.; **Li, Z.**; Wang, Z.; Xiong, J.; Li, T. (2026). Judging the Judges: Human Validation of Multi-LLM Evaluation for High-Quality K–12 Science Instructional Materials. *Computing Conference 2026. Intelligent Computing, pp. 481–496*. DOI.

6. **Li, Z.**; Xiao, F.; Lin, J.; Zou, X.; Zheng, Q.; Xiong, J. (2025). StoryLab: Empowering Personalized Learning for Children Through Teacher-Guided Multimodal Story Generation. *AIED 2025, pp. 285–292*. DOI.

7. **Li, Z.**; Akemoglu, Y.; Lyu, J.; Zheng, Q.; Xiong, J. (2025). ASD-HI: A Parent-Child Interaction Dataset for Automated Assessment of Home Intervention. *AIED 2025, pp. 48–62*. DOI.

8. Xiao, F.; **Li, Z.**; Lin, J.; Zou, X.; Yang, D.; Zou, E. W.; Xiong, J. (2025). Leveraging an LLM-enhanced bilingual conversational agent for EFL children's dialogic reading: Insights from children, parents, and educators. *Computers and Education: Artificial Intelligence, article 100484*. DOI.

9. Xiao, F.; Zou, E. W.; Lin, J.; **Li, Z.**; Yang, D. (2025). Parent-led vs. AI-guided dialogic reading: Evidence from a randomized controlled trial in children's e-book context. *British Journal of Educational Technology, 56(5), 1784–1813*. DOI.

10. Sheikhi Karizaki, M.; **Li, Z.**; Passonneau, R. J. (2025). Criteria for Demonstration Examples for LLM Assessment of Science Essays. *Workshop on Epistemics and Decision-Making in AI-Supported Education. AIED 2025. Accepted manuscript*. Paper.

11. **Li, Z.**; Passonneau, R. J. (2024). Joint Training for Selective Prediction. *arXiv:2410.24029. Preprint*. arXiv.

Publications and research outputs (continued)

2023–2014

12. **Li, Z.**; Lloyd, S.; Beckman, M.; Passonneau, R. (2023). Answer-state Recurrent Relational Network (AsRRN) for Constructed Response Assessment and Feedback Grouping. *Findings of EMNLP 2023, pp. 3879–3891*. DOI.

13. **Li, Z.**; Zhang, C.; Jin, Y.; Cang, X.; Puntambekar, S.; Passonneau, R. J. (2023). Learning When to Defer to Humans for Short Answer Grading. *AIED 2023, pp. 414–425*. DOI.

14. **Li, Z.**; Lloyd, S. E.; Beckman, M. D.; Passonneau, R. J. (2023). I-STUDIO: A reliable statistical automatic short answer assessment dataset. *Penn State Data Commons. Dataset*. Record.

15. Passonneau, R. J.; Koenig, K.; **Li, Z.**; Soddano, J. (2023). The Ideal versus the Real Deal in Assessment of Physics Lab Report Writing. *European Journal of Applied Sciences, 11(2), 626–644*. DOI.

16. Lloyd, S. E.; Beckman, M. D.; Pearl, D. K.; Passonneau, R. J.; **Li, Z.**; Wang, Z. (2022). Foundations for AI-Assisted Formative Assessment Feedback for Short-Answer Tasks in Large-Enrollment Classes. *11th International Conference on Teaching Statistics (ICOTS 11)*. DOI.

17. Passonneau, R. J.; **Li, Z.**; Atil, B.; Koenig, K. M. (2022). Reliable Rubric-Based Assessment of Physics Lab Reports: Data for Machine Learning. *Penn State Data Commons. Dataset*. Record.

18. **Li, Z.**; Tomar, Y.; Passonneau, R. J. (2021). A Semantic Feature-Wise Transformation Relation Network for Automatic Short Answer Grading. *EMNLP 2021, pp. 6030–6040*. DOI.

19. **Li, Z.**; Feng, Y.; Xu, J.; Guo, J.; Lan, Y.; Cheng, X. (2019). Teaching Machines to Extract Main Content for Machine Reading Comprehension. *AAAI 2019, 33(1), 9973–9974. Two-page contribution*. PDF.

20. **Li, Z.**; Xu, J.; Lan, Y.; Guo, J.; Feng, Y.; Cheng, X. (2018). Hierarchical Answer Selection Framework for Multi-passage Machine Reading Comprehension. *China Conference on Information Retrieval (CCIR), pp. 93–104*. DOI.

21. Guo, T.; Xu, J.; Yan, X.; Hou, J.; Li, P.; **Li, Z.**; Guo, J.; Cheng, X. (2016). Ease the Process of Machine Learning with Dataflow. *CIKM 2016, pp. 2437–2440. Demonstration paper*. DOI.

22. Wang, Y.; **Li, Z.**; Liu, J.; He, Z.; Huang, Y.; Li, D. (2014). Word Vector Modeling for Sentiment Analysis of Product Reviews. *NLPCC 2014, pp. 168–180*. DOI.