

PEIXIA SHAO  
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## EDUCATION

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**University of Texas at Austin**, Austin, TX 2025  
Ph.D. in Curriculum and Instruction  
Specialized in Learning Technologies  
*Finished Coursework of M.Ed. in Quantitative Methods*  
Dissertation: Understanding How Community of Inquiry, and Self-Regulated Learning Shape  
Online Graduate Learners' Behavioral Engagement and Learning Outcomes  
Committee: Min Liu (Supervisor), Joan Hughes, Xiaofen Hamilton, Hyeon-Ah Kang

**University of Rochester**, Rochester, NY 2018  
M.S. in Teaching  
Specialized in Teaching English to Speakers of Other Languages (TESOL)

**Beijing University of Chemical Technology**, Beijing, China 2014  
B.A in English

## RESEARCH INTERESTS

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Generative AI in Education, Learning Analytics, Educational Data Mining, Technology-Enhanced Problem-Based Learning, Game-Based Learning, Online Learning, Teacher Professional Development

## RESEARCH EXPERIENCE

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**Learning Engineering Institute** 5/2025 - PRESENT  
Post Doctoral Scholar, Arizona State University

**ALTER-Math: Generative AI-powered Teachable Agent** 5/2025 - 12/2025  
Research Intern, Advanced Computing for Education Lab, University of Florida

**Alien Rescue: Multimedia Problem-Based Learning Game** 1/2019 - 12/2025  
Researcher, Alien Rescue Research & Development Team, UT Austin

**Knowledge-based Chatbot in MOOCs** 8/2021 - 8/2022  
Researcher, Knight Center for Journalism in the Americas, UT Austin

**Graduate Career Outcomes** 10/2019 - 8/2019  
Graduate Research Assistant, Texas Career Engagement, UT Austin

## PUBLICATIONS

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*Peer-Reviewed Journal Articles*

- Han, S., Liu, M., Cai, Y., **Shao, P.** (2025). Need for Cognition's Impact in Science PBL: Assessing Motivation and Learning Outcome Among Diverse Middle School Students. *Instructional Science*. <https://doi.org/10.1007/s11251-025-09731-w> (2023 Impact factor: 2.6)
- Liu, M., Han, S., **Shao, P.**, & Cai, Y. (2025). Mental Effort Matters: Unpacking the Influence of Need for Cognition on Middle School Students' Motivation and Learning Performance in Technology-Enriched Problem-Based Learning. *Educational technology research and development*. <https://doi.org/10.1007/s11423-025-10465-2> (2023 Impact factor: 3.3)
- Shao, P.**, Pan, Z., Meng, C., & Liu, M. (2024). Revealing pre-service teachers' reflections regarding online practicum through the lens of TPACK. *Education and Information Technologies*, 1-35. <https://doi.org/10.1007/s10639-024-13053-8> (2023 Impact factor: 4.8)
- Liu, M., Cai, Y., Han, S., & **Shao, P.** (2023). Understanding Middle School Students' Self-Efficacy and Performance in a Technology-Enriched Problem-Based Learning Program: A Learning Analytics Approach. *Journal of Educational Technology Systems*, 51(4), 513-543. <https://doi.org/10.1177/00472395231174034> (h5-index: 29)
- Han, S., Hamilton, X., Cai, Y., **Shao, P.**, & Liu, M. (2023). Knowledge-based chatbots: a scale measuring students' learning experiences in massive open online courses. *Educational technology research and development*, 71(6), 2431-2456. <https://doi.org/10.1007/s11423-023-10280-7> (2023 Impact factor: 3.3)
- Liu, M., Cai, Y., Han, S., & **Shao, P.** (2022). Understanding Student Navigation Patterns in Game-Based Learning. *Journal of Learning Analytics*, 9(3), 50-74. <https://doi.org/10.18608/jla.2022.7637> (2023 Impact factor: 2.9)
- Cai, Y., Pan, Z., Han, S., **Shao, P.**, & Liu, M. (2022). The Impact of Multimodal Communication on Learners' Experience in a Synchronous Online Environment: A Mixed-Methods Study. *Online Learning*, 26(4), 118-145. <https://doi.org/10.24059/olj.v26i4.3448> (2023 Impact factor: 2.8)
- Han, S., Liu, M., Pan, Z., Cai, Y., & **Shao, P.** (2022). Making FAQ chatbots more Inclusive: an examination of nonnative English users' interactions with new technology in massive open online courses. *International Journal of Artificial Intelligence in Education*, 33(3), 752-780. <https://doi.org/10.1007/s40593-022-00311-4> (2023 Impact factor: 4.7)
- Liu, M., Pan, Z., Cai, Y., **Shao, P.**, & Han, S. (2021). The Effect of a Multimedia-Enriched Problem-Based Learning Environment on Socioeconomically Disadvantaged Middle School Students' Science Learning: Examining the Relationship Among Self-Efficacy, Attitude, and Performance. *Journal of Educational Multimedia and Hypermedia*, 30(4), 359-391. <https://www.learntechlib.org/p/219807> (h5-index: 11)

Liu, M., Han, S., **Shao, P.**, Cai, Y., & Pan, Z. (2021). The Current Landscape of Research and Practice on Visualizations and Dashboards for Learning Analytics. In *Visualizations and Dashboards for Learning Analytics* (pp. 23-46). Springer, Cham.

#### *Peer-Reviewed Conference Proceedings*

Cai, Y., **Shao, P.**, Han, S., & Liu, M. (2025). Analyzing Middle School Students' Performance in a Multimedia-Enriched Problem-Based Learning Program Through Learning Analytics. *The Journal of Applied Instructional Design*, 14(2).  
<https://doi.org/10.59668/2222.20763>

**Shao, P.**, Meng, C., Pan, Z., & Liu, M. (2024). Investigate pre-service teachers' learning behaviors and their relationship with academic performance through LMS log data. *The Journal of Applied Instructional Design*, 13(2). <https://dx.doi.org/10.59668/1269.15628>

Shi, Y., Hong, D., Cai, Y., **Shao, P.**, & Hughes, J. E. (2019). Teaching educational technology: an analysis of course syllabi from teacher education programs. In *the 42nd Annual Proceedings of Association for Educational Communications and Technology (AECT)* (pp. 236-248). Las Vegas, NV, United States. Retrieved from:  
[https://members.aect.org/pdf/Proceedings/proceedings19/2019/19\\_30.pdf](https://members.aect.org/pdf/Proceedings/proceedings19/2019/19_30.pdf)

#### *Manuscript in Preparation*

**Shao, P.**, Li, C., Li, H., & Xing, W (ready for submission). Students' peer tutoring strategies and behaviors in Generative AI-powered Teachable Agent: Effects on Learning Gains, and Mathematical Language Accuracy.

**Shao, P.**, & Pan, Z. (in progress). Analyzing students' programming submission behaviors in autograding systems within an online graduate engineering course

## **PEER-REVIEWED CONFERENCE PRESENTATIONS**

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Liu, M., Han, S., **Shao, P.**, & Cai, Y. (2025). Does Need for Cognition Determine Success in Science Problem-Based Learning?: Analyzing Middle School Students' Performance. Presentation at the annual conference of *American Educational Research Association (AERA)*. Denver, CO. (Received the 2025 AERA Instructional Technology SIG- Best Paper Award)

Cai, Y., **Shao, P.**, Han, S., & Liu, M (2024, October). Analyzing Middle School Students' Performance in a Multimedia-Enriched Problem-Based Learning Program Through Learning Analytics. Paper at the annual conference of *Association for Educational Communications and Technology (AECT)*. Kansas City. MO.

Liu, M., Cai, Y., Han, S., & **Shao, P.** (2024, April). Understanding Middle School Students' Self-Efficacy in a Technology-Enriched Problem-Based Learning Program: A Learning Analytics Approach. Presentation at the annual conference of *American Educational*

*Research Association (AERA)*. Philadelphia, Pennsylvania. (Nominated for the 2024 AERA Instructional Technology SIG- Best Paper Award)

Liu, M., Cai, Y., Han, S., & **Shao, P.** (2023, October). Investigating Students' Navigation Patterns in a Digital Educational Game. Presentation at the annual conference of *Association for Educational Communications and Technology (AECT)*. Orlando, FL.

**Shao, P.**, Cai, Y., Han, S., Pan, Z., & Liu, M. (2023, April). Exploring the Effects of Learning Analytics Dashboards on Learning Outcomes: A Meta-Analysis. Presentation at the annual conference of *American Educational Research Association (AERA)*. Chicago, Illinois.

Liu, M., Cai, Y., Han, S., & **Shao, P.** (2023, April). Examining Students' Navigation Patterns in Game-Based Learning Using Learning Analytics. Presentation at the annual conference of *American Educational Research Association (AERA)*. Chicago, Illinois.

Han, S., Cai, Y., **Shao, P.**, & Liu, M. (2023, April). Scale Development to Measure Students' Learning Experiences with Knowledge-Based Chatbots in Massive Open Online Courses. Presentation at the annual conference of *American Educational Research Association (AERA)*. Chicago, Illinois.

Han, S., Cai, Y., **Shao, P.**, & Liu, M. (2022, October). Students' Experiences with Knowledge-Oriented Chatbots: A Systematic Focused Review from 2012 to Present. Presentation at the annual conference of *Association for Educational Communications and Technology (AECT)*. Las Vegas, NV.

Cai, Y., Liu, M., Han, S. & **Shao, P.** (2022, October). Analyzing Learners' Navigation Patterns in a Science Educational Game through Clustering Analyses. Presentation at the annual conference of *Association for Educational Communications and Technology (AECT)*. Las Vegas, NV.

Pan, Z., Han, S., Cai, Y., **Shao, P.**, & Liu, M. (2022, April). The Role of Learning Analytics Scaffolding System in Middle School Science Problem-Based Learning Activities. Presentation at the annual conference of *American Educational Research Association (AERA)*. San Diego, California.

Liu, M., Pan, Z., Cai, Y., **Shao P.**, & Han, S. (2022, April). The Effect of Multimedia-Enriched Problem-Based Learning on Socioeconomically Disadvantaged Middle School Students' Science Learning. Presentation at the annual conference of *American Educational Research Association (AERA)*. San Diego, California.

Han, S., Liu, M., Pan, Z., & Cai, Y, **Shao, P.** (2022, April). Making Chatbots More Inclusive: Addressing Challenges of Non-Native English Speakers with New Technology in MOOCs. Presentation at the annual conference of *American Educational Research Association (AERA)*. San Diego, California.

Han, S., **Shao, P.**, & Cai, Y, Liu, M., Pan, Z. (2021, November). The Current Landscape of Research and Practice on Visualizations and Dashboard for Learning Analytics. Presentation at the annual conference of *Association for Educational Communications and Technology* (AECT), Online.

Harron, J. R., Siegel, L., Han, S., & **Shao, P.** (2021, July). MathHappens: Making math personal. Workshop at the annual *Connected Learning Summit 2021* (CLS2021), Online.

## TEACHING EXPERIENCE

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**Teaching Assistant**, Department of Curriculum and Instruction, UT Austin 8/2022-5/2025

*Graduate level:*

EDC390T Instructional Systems Design (Synchronous & Asynchronous Online, Fall 2022, Fall 2024)

EDC385G Interactive Multimedia Design and Production (Synchronous & Asynchronous Online, Spring 2023)

EDC390T Foundations of Learning Technology (Synchronous & Asynchronous Online, Fall 2023)

EDC385G Design and Strategies for New Media (Synchronous & Asynchronous Online, Spring 2024)

*Undergraduate level:*

UGS302 Live, Play, Communicate, and Learn with Digital Media Technologies (Synchronous & Asynchronous Online, Spring 2023, Spring 2024)

**Teaching Assistant**, Department of Nutritional Sciences, UT Austin 9/2021-5/2022

*Graduate level*

NTR 337 Principles of Epidemiology in Nutritional Sciences (In-person & Synchronous Online, Spring 2022)

*Undergraduate level:*

NTR 306 Fundamentals of Nutrition (In-person & Synchronous Online, Fall 2021)

**Summer Program Math Instructor**, Round Rock AISD 6/2021-8/2021

**English Conversation Class Instructor**,  
University of Rochester International Services Office 9/2017-12/2017

**First Grade Literacy Student Teacher**,  
Rochester City School No.33, Rochester, NY 9/2017-12/2017

**Seventh Grade Literacy Student Teacher**,  
Rochester School District East High School, Rochester, NY 9/2017-12/2017

**English as a Second Language Teacher**,  
Web International English Institute, Shanghai, China 4/2014-7/2016

## PROFESSIONAL EXPERIENCE

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**Instructional Technology Support**, Department of Computer Science, 5/2024-8/2024

UT Austin

**Instructional Design Consultant**, School of Nursing, UT Austin 1/2021-5/2021

**Instructional Design and Development Intern**, Texas Workforce Commission, 5/2019-8/2019

## PROFESSIONAL SERVICE

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**Reviewer**, Frontiers in Education 10/2025

**Reviewer**, AERA Conference 9/2025

**Reviewer**, Humanities and Social Sciences Communications (HSSC) 6/2025

**Event Assistant & Panelist**, Prospective PhD and Master's Student Panels,  
Learning Technologies Program, UT Austin 3/2024

**Reviewer**, Journal of Educational Computing Research (JECR) 12/2022

**Reviewer**, Journal of Research on Technology in Education (JRTE) 5/2021

**Guest Speaker**, EDC385G Interactive Multimedia Design and Production, UT Austin 3/2021

**Reviewer**, Chapter for *Visualizations and Dashboards for Learning Analytics*, Springer 3/2021

**Reviewer**, Journal of Research on Technology in Education (JRTE) 2/2021

**Reviewer**, Educational Technology Research and Development (ETR&D) 1/2021

**Mandarin Teacher**, Victor Central School District, Victor, NY 10/2017-12/2017

## HONORS & AWARDS

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Texas New Scholars Continuing Fellowship \$8250 (UT Austin) 2025

George I. Sanchez Endowed Presidential Fellowship \$3600 (UT Austin) 2024

Richard A. "Porky" Haberman Endowed Graduate Fellowship in Teacher Education  
\$2000 (UT Austin) 2024

Stephanie Hirsh and Shirley Hard Endowed Excellence Fund for Research Award  
\$1100 (UT Austin) 2024

Faculty/Student Collaborative Award \$500 (UT Austin) 2024

Dr. O. L. Davis Jr. Endowed Excellence Award \$1500 (UT Austin) 2024

Graduate School Professional Development Award \$500 (UT Austin) 2023

Stephanie Hirsh and Shirley Horn Endowed Excellence Fund for Research Award  
\$1250 (UT Austin) 2022

Faculty/Student Collaborative Award \$500 (UT Austin) 2022

Faculty/Student Collaborative Award \$500 (UT Austin) 2021

Graduate School Professional Development Award \$500 (UT Austin) 2019

## **PROFESSIONAL MEMBERSHIPS**

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Society for Learning Analytics Research (SoLAR)

American Educational Research Association (AERA)

Association for Educational Communications and Technology (AECT)

## **SKILLS**

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**Programming:** HTML/CSS

**Data Analysis/Visualization:** R, Python, SPSS, Mplus, Tableau, Labelbox

**Authoring Tools:** Adobe Captivate, Articulate Storyline & Rise

**Design/Prototyping Tools:** Figma, InVision, Sketch, GIMP, Axure, Adobe XD, Photoshop

**Learning Management Systems:** Canvas, Moodle, Blackboard