

# Heeryung Choi, Ph.D.

## Curriculum Vitae

CONTACT INFORMATION	heeryung@umich.edu <a href="https://www.linkedin.com/in/heeryung">www.linkedin.com/in/heeryung</a>	US Permanent Resident
EDUCATION	<b>Ph.D. in Information with Data Science Certificate</b> <b>University of Michigan</b> Dissertation: SRLA: Self-Regulated Learning Analytics Advisor: Professor Christopher Brooks Committee: Professors Philip H. Winne, Stephanie Teasley, and Andrew Krumm	Sep 2016–Apr 2022 Ann Arbor, MI, USA
	<b>M.S. in Engineering (Cognitive Science)</b> <b>Seoul National University</b> Advisor: Professor Joonhwan Lee	Mar 2014–Aug 2016 Seoul, South Korea
	<b>B.A. in English Language Education</b> <b>Seoul National University</b> Summa Cum Laude	Mar 2009–Feb 2014 Seoul, South Korea
PROFESSIONAL APPOINTMENTS	<b>Postdoctoral Research Associate</b> <b>University of Minnesota, Department of Educational Psychology</b> Minneapolis, MN, USA Conducted data mining on institution-wide student data from learning management system interactions (Unizin, Canvas) to identify longitudinal self-regulated learning behavior patterns and their impacts on retention and learning performance. Developed a codebook and conducted open coding on online math tutoring for K-12 students, guided by self-regulated learning theory. Supervisors: Professors Panayiota (Pani) Kendeou and Caitlin Mills	Aug 2024–Aug 2025
	<b>Research Fellow</b> <b>University of Michigan, School of Information</b> Investigated the impact of reflection on students' mindful use of AI-generated hints and their performance using field experiments and mixed methods. Supervisor: Professor Christopher Brooks	May 2024–Aug 2024 Ann Arbor, MI, USA
	<b>Digital Learning Postdoctoral Associate</b> <b>Massachusetts Institute of Technology, Center for Transportation and Logistics</b> Led an interdisciplinary research collaboration to develop a learning analytics dashboard supporting self-regulated learning for over 10,000 learners in the MITx Micro-Masters Program. Supervisors: Drs. Eva Ponce-Cueto and Inma Borrella	May 2022–Apr 2024 Cambridge, MA, USA
GRANTS	Principal Investigator, Spencer Foundation Small Research Grant (Not funded) Primary grant author, MIT Integrated Learning Initiative Learning Effectiveness Grant (Funded, USD 50,000)	Apr 2025 2022–2023
HONORS AND AWARDS	Outstanding Graduate Student Instructor of the Year Samsung PhD Scholarship (5 years) Korean National Research Scholarship Graduated Summa Cum Laude Seoul National University Merit Scholarship	2020–2021 2016–2020 2015 2014 2011–2013
PUBLICATIONS	<b>Peer-reviewed Journal Papers</b> <b>Choi, H.</b> , co-authors. (under review). Reflection-Satisfaction Tradeoff: Investigating Impact of Reflection on Student Engagement with AI-Generated Programming Hints, <i>submitted to a journal</i> . <b>Choi, H.</b> , Jovanovic, J., Poquet, S., Brooks, C., Joksimovic, S., & Williams, J. J. (2023). The Benefit of Reflection Prompts Encouraging Learning with Hints in Programming Education. <i>The Internet and Higher Education</i> , 58, 100903.	

Brooks, C., Quintana, R. M., **Choi, H.**, Quintana, C., NeCamp, T., & Gardner, J. (2021). Towards Culturally Relevant Personalization at Scale: Experiments with Data Science Learners. *International Journal of Artificial Intelligence in Education*, 31(3), 516-537.

#### Peer-reviewed Conference Proceedings

**Choi, H.**, Steadman, C., Mills, C., & Kendeou., P. (in press). From Clicks to Insights: Exploring Self-Regulated Learning Behaviors Longitudinally Using Institutional Data. In *Proceeding of 2026 American Educational Research Association (AERA) Annual Meeting*, Los Angeles, CA.

Phung, T., **Choi, H.**, Wu, M., Brooks, C., Gulwani, S., & Singla, A. (in press). Closing The Loop: An Instructor-In-The-Loop AI Assistance System for Supporting Student Help-Seeking in Programming Education. In *Proceedings of the 57th ACM Technical Symposium on Computer Science Education (SIGCSE)*. **Awarded Best Paper**

Phung, T., **Choi, H.**, Wu, M., Singla, A., & Brooks, C. (2025). Plan More, Debug Less: Applying Metacognitive Theory to AI-Assisted Programming Education. In *Proceedings of the 26th International Conference on Artificial Intelligence in Education (AIED)*. Springer Nature Switzerland.

Phung, T., Wu, M., **Choi, H.**, Soares, G., Gulwani, S., Singla, A., & Brooks, C. (2025). Bridging Gaps Between Student and Expert Evaluations of AI-Generated Programming Hints. In *Proceedings of the Twelfth ACM Conference on Learning @ Scale (L@S)* (pp. 241-245).

Singh, A., Fariha, A., Brooks, C., Soares, G., Henley, A., Tiwari, A., M, Chethan., **Choi, H.**, & Gulwani, S. (2024). Investigating Student Mistakes in Introductory Data Science Programming. In *Proceedings of the 55th ACM Technical Symposium on Computer Science Education (SIGCSE)*.

**Choi, H.**, Borrella, I., & Ponce-Cueto, E. (2023). Meta-LAD: Developing a Learning Analytics Dashboard with Theoretically Grounded and Context-Specific Approaches. In *Proceedings of the 9th IEEE Learning with MOOCs (LWMOOCs)*. **Nominated for Best Paper**

**Choi, H.**, Winne, P. H., Brooks, C., Li, W., & Shedden, K. (2023). Logs or Self-Reports? Misalignment Between Behavioral Trace Data and Surveys When Modeling Learner Achievement Goal Orientation. In *Proceedings of the 13th International Conference on Learning Analytics & Knowledge (LAK)*.

**Choi, H.**, Mills, C., Brooks, C., Doherty, S.,& Singh, A. (2022). Design Recommendations for Using Textual Aids in Data-Science Programming Courses. In *Proceedings of the 53rd ACM Technical Symposium on Computer Science Education (SIGCSE)*.

**Choi, H.**, Dowell, N., Brooks, C., & Teasley, S. (2019). Social Comparison in MOOCs: Perceived SES, Opinion, and Message Formality. In *Proceedings of the 9th International Conference on Learning Analytics & Knowledge (LAK)* (pp. 160-169).

Yan, W., Dowell, N., Holman, C., Welsh, S. S., **Choi, H.**, & Brooks, C. (2019). Exploring Learner Engagement Patterns in Teach-Outs Using Topic, Sentiment and On-Topicness to Reflect on Pedagogy. In *Proceedings of the 9th International Conference on Learning Analytics & Knowledge (LAK)* (pp. 180-184).

Lin, Y., Dowell, N., Godfrey, A., **Choi, H.**, & Brooks, C. (2019). Modeling Gender Dynamics in Intra and Interpersonal Interactions During Online Collaborative Learning. In *Proceedings of the 9th International Conference on Learning Analytics & Knowledge (LAK)* (pp. 431-435).

#### Book Chapter

**Choi, H.**, Winne, P. H., & Brooks, C. (2023). Reconfiguring Measures of Motivational Constructs Using State-Revealing Trace Data. In V. Kovanovic, R. Azevedo, D. C. Gibson, & D. Ifenthaler (Eds.), *Unobtrusive Observations of Learning in Digital Environments: Examining Behavior, Cognition, Emotion, Metacognition and Social Processes Using Learning Analytics* (pp. 7389). Cham: Springer International Publishing.

	SC0x: Supply Chain Analytics (online credential, 3,000+ students)	2022–2024
	SIADS 505: Data Manipulation (online degree, 20+ students)	2021
<b>Teaching Assistant</b>		2018–2021
	SIADS 521: Visual Exploration of Data (online degree, 240+ graduate students)	
	SIADS 505: Data Manipulation (online degree, 270+ graduate students)	
	SI 630: Natural Language Processing: Algorithms and People (residential, 70+ graduate students)	
	SI 671: Data Mining (residential, 50+ graduate students)	
<b>PRESENTATIONS</b>		
	<b>Peer-reviewed Presentations</b>	
	<b>Choi, H.</b> , Steadman, C., Mills, C., & Kendeou., P. (2025). Designing Theory-Guided Log Indicators of Self-Regulated Learning During Academic Challenges. In <i>National Consortium for Instruction and Cognition Annual Meeting 2025 (NCIC)</i> .	
	<b>Peer-reviewed Workshops and Poster</b>	
	<b>Choi, H.</b> , Brooks, C., Hayward, C., Kitto, K., Gasevic, D., Pardo, A., Winne, P., & Heffernan., N. (2021). Engineering Learning Analytics Technology Environments (ELATE): Understanding Iteration Between Data and Theory, and Design and Deployment. In <i>The 11th international conference on learning analytics &amp; knowledge (LAK)</i> .	
	<b>Choi, H.</b> , Dowell, N., Brooks, C., & Teasley, S. (2019). Social Comparison in MOOCs: Perceived SES, Opinion, and Message Formality. In <i>The 9th International Conference on Learning Analytics &amp; Knowledge (LAK)</i> (pp. 160-169).	
	<b>Choi, H.</b> , Wang, Z., Brooks, C., Collins-Thompson, K., Reed, B. G., & Fitch, D. (2017). Social Work in The Classroom? A Tool to Evaluate Topical Relevance in Student Writing. In <i>The 10th International Conference on Educational Data Mining (EDM)</i> (p. 386).	
	<b>Choi, H.</b> , Brooks, C., & Collins-Thompson, K. (2017). What Does Student Writing Tell Us about Their Thinking on Social Justice?. In <i>The 7th International Conference on Learning Analytics &amp; Knowledge (LAK)</i> (pp. 594-595).	
	<b>Invited Talks</b>	
	<b>Choi, H.</b> (2025, Jan). Do You Know What You Want to Know From Data? Insights From Log and Survey Data to Capture Different Aspects of Goals, <i>Technical University of Munich, Munich Data Science Institute and School of Social Sciences and Technology</i> .	
	<b>Choi, H.</b> (2024, Dec). Interpreting Student Interaction with AI-Generated Hints and Reflection Prompts, <i>University of Minnesota, Department of Educational Psychology</i> .	
	<b>Choi, H.</b> (2023, Oct). Advancing Learning Analytics: Insights From Trace and Survey Data on Self-Regulated Learning, <i>Cornell University, Ann S. Bowers College of Computing and Information Science</i> .	
	<b>Choi, H.</b> (2023, Aug). Upskilling SCM Professionals Through Online Learning, <i>Massachusetts Institute of Technology, Center for Transportation and Logistics Monthly Research Briefing</i> .	
	<b>Choi, H.</b> (2023, Mar). Survey or Trace Data?: Steps to Understand Self-Regulated Learning Better, <i>Syracuse University, School of Education</i> .	
	<b>Choi, H.</b> (2023, Jan). Meta-LAD: A Dashboard Supporting Self-Regulated Learning, <i>Massachusetts Institute of Technology, Open Learning, MITx Digital Learning Lab</i> .	
	<b>Choi, H.</b> (2022, Oct). Interviewed for INFO 4100 Learning Analytics, <i>Cornell University, Department of Information Science</i> .	
	<b>Choi, H.</b> (2021, Oct). Using Data to Understand Self-Regulated Learning, <i>Massachusetts Institute of Technology, Center for Transportation and Logistics</i> .	
	<b>Choi, H.</b> (2021, May). Engineering Learning Analytics Technology Environments (ELATE), <i>University of Michigan, Center of Academic Innovation</i> .	
<b>SERVICE</b>	<b>Conference Organizing Committee</b>	

	Poster & Demo Track Chair International Conference on Educational Data Mining 2025 (EDM' 25)	2024–2025
	Poster & Demo Track Chair International Conference on Educational Data Mining 2024 (EDM' 24)	2023–2024
<b>Peer Review (Journals)</b>		
Metacognition and Learning	2024–Present	
British Journal of Educational Technology (BJET)	2022–Present	
International Journal of Artificial Intelligence in Education (IJAIED)	2020–Present	
Journal of Learning Analytics (JLA)	2019–Present	
<b>Peer Review (Conference Program Committees)</b>		
ACM Learning @ Scale Conference (L@S)	2025–Present	
Technical Symposium on Computer Science Education (SIGCSE)	2024–Present	
International Educational Data Mining Conference (EDM)	2024–Present	
American Educational Research Association (AERA) Annual Meeting	2023–Present	
Learning with MOOCs (LwMOOCs)	2023	
Artificial Intelligence in Education Conference (AIED)	2020–Present	
ACM Learning Analytics and Knowledge Conference (LAK)	2016–Present	
<b>Peer Review (Grants)</b>		
Society for Learning Analytics Research Early Career Grant	2023	
<b>Leadership</b>		
Organized a graduate research competition in collaboration with Big Picture Learning, a non-profit organization	2025	University of Minnesota
Organized a job panel featuring international scholars on academic careers beyond the USA	Spring 2025	University of Minnesota
Member, Working Group of Society for Learning Analytics Research (SoLAR)	2019–Present	2019–Present
Doctoral Executive Committee Member of School of Information	2017–2018	University of Michigan
MEDIA COVERAGE New dashboard supports online learners' self-regulated learning and performance	Oct 2023	MIT Open Learning
<b>REFERENCES</b>	<b>Caitlin Mills, Ph.D.</b> Associate Professor Department of Educational Psychology University of Minnesota Minneapolis, MN, USA <a href="mailto:cmills@umn.edu">cmills@umn.edu</a>	<b>Christopher Brooks, Ph.D.</b> Associate Professor School of Information University of Michigan Ann Arbor, MI, USA <a href="mailto:brooks@umich.edu">brooks@umich.edu</a>
	<b>Philip H. Winne, Ph.D.</b> Professor Emeritus Faculty of Education Simon Fraser University Burnaby, BC, Canada <a href="mailto:winne@sfu.ca">winne@sfu.ca</a>	<b>Oleksandra Poquet, Ph.D.</b> Professor in Learning Analytics School of Social Sciences and Technology Technical University of Munich Munich, Germany <a href="mailto:sasha.poquet@tum.de">sasha.poquet@tum.de</a>