Xinying Hou

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Research Interests

Topics: Learning Technology, AI in Education, Computing Education, Educational Games, Human-Computer Interaction

Methodologies: Mixed Methods (qualitative + quantitative); Data Mining; Usability Testing; Applied Machine Learning

Education

09/2021- Present **University of Michigan, Ann Arbor, MI, USA**
Ph.D. - Information, School of Information (expected)
Advisor: Barbara Ericson

09/2019 - 12/2020 **Carnegie Mellon University (CMU), PA, USA**
MS - Human-Computer Interaction Institute, School of Computer Science
GPA: 4.0/4.0
Advisor: Kenneth R. Koedinger; Bruce M. McLaren

09/2015 - 07/2019 **Nanjing University (NJU), Nanjing, China**
BA - Sociology, School of Social and Behavioral Sciences
GPA: 3.99/4.0, Ranking: Top 1%
Advisor: Yuxiao Wu
Outstanding Graduate, Outstanding Undergraduate Thesis

Publications

Heavily-reviewed Journal Manuscripts (J)

J.03 **The Impact of Gender in Learning with Games: A Consistent Effect in a Math Learning Game.**
Huy A. Nguyen, **Xinying Hou**, J Elizabeth Richey, Bruce M McLaren

IJGBL: International Journal of Game-Based Learning, 12(1), pp. 1–29.

J.02 **How Instructional Context Can Impact Learning with Educational Technology: Lessons from a Study with a Digital Learning Game.**
Bruce M McLaren, J. Elizabeth Richey, Huy A Nguyen, and **Xinying Hou**
C&E: Computers & Education, 178, pp. 1–20.

J.01 **Assessing the Effects of Open Models of Learning and Enjoyment in a Digital Learning Game.**
Xinying Hou, Huy A Nguyen, J. Elizabeth Richey, Erik Harpstead, Jessica Hammer, Bruce M McLaren
IJAIED: International Journal of Artificial Intelligence in Education, pp. 1–31.

Heavily-reviewed Conference Proceedings (C)

C.07 **How Novices Use LLM-Based Code Generators to Solve CS1 Coding Tasks in a Self-Paced Learning Environment**
Majeed Kazemitabaar, **Xinying Hou**, Austin Henley, Barbara J Ericson, David Weintrop, Tovi Grossman
Koli Calling 2023: International Conference on Computing Education Research.

C.06 **Understanding the Effects of Using Parsons Problems to Scaffold Code Writing for Students with Varying CS Self-Efficacy Levels**
Xinying Hou, Barbara Jane Ericson, Xu Wang
Koli Calling 2023: International Conference on Computing Education Research.

C.05 **Evaluating ChatGPT's Decimal Skills and Feedback Generation in a Digital Learning Game**
Huy A Nguyen, Hayden Stec, **Xinying Hou**, Sarah Di, Bruce M McLaren
EC-TEL 2023: European Conference on Technology Enhanced Learning.

C.04 **Examining the Benefits of Prompted Self-explanation for problem-solving in a Decimal Learning Game.**
Huy A. Nguyen, **Xinying Hou**, Hayden Stec, Sarah Di, John Stamper, Bruce M. McLaren
AIED 2023: International Conference on Artificial Intelligence in Education.

C.03 **Using Adaptive Parsons Problems to Scaffold Write-Code Problems.**
Xinying Hou, Barbara Jane Ericson, Xu Wang
ICER 2022: ACM Conference on International Computing Education Research

C.02 **Moving beyond Test Scores: Analyzing the Effectiveness of a Digital Learning Game through Learning Analytics.**
Huy A Nguyen, **Xinying Hou**, John Stamper, Bruce M. McLaren
EDM 2020: International Conference on Educational Data Mining

C.01 **Exploring How Gender and Enjoyment Impact Learning in a Digital Learning Game.**
Xinying Hou, Huy A Nguyen, J. Elizabeth Richey, Bruce M. McLaren
AIED 2020: International Conference on Artificial Intelligence in Education.

Peer-reviewed Conference Poster (P)

P.04 **Parsons Problems to Scaffold Code Writing: Impact on Performance and Problem-Solving Efficiency.**
Xinying Hou, Barbara Jane Ericson, Xu Wang
ITiCSE 2023: Conference on Innovation and Technology in Computer Science Education V. 2.

P.03 **Design a Dashboard for Secondary School Learners to Support Mastery Learning in a Gamified Learning Environment.**
Xinying Hou, Tomohiro Nagashima, Vincent Aleven
EC-TEL 2022: European Conference on Technology Enhanced Learning.

P.02 **Drinking Our Own Champagne: Analyzing the Impact of Learning-by-doing Resources in an E-learning Course.**
Xinying Hou, Paulo F Carvalho, Kenneth R Koedinger
LAK 2021: International Conference on Learning Analytics & Knowledge.

P.01 **Increasing Children's Knowledge of Pattern Detection and Skip Counting Using a Tablet-based Math Activity.**
Cheyeon Ha, **Xinying Hou**, Huy A Nguyen, Judith Odili Uchidiuno
ICLS 2020: International Conference of the Learning Sciences

Research Experiences

09/2021 - Present **Graduate Student Research Assistant**
University of Michigan - Ann Arbor
Ericson Research Group, Advisor: Barbara Ericson
Collborator: Xu Wang; John Stamper; Bruce M. McLaren

09/2020 - 7/2021 **Graduate Research Assistant**
Carnegie Mellon University
Aleven Lab, Advisor: Vincent Aleven; Mentor: Tomohiro Nagashima

05/2020 - 7/2021 **Graduate Research Assistant**
Carnegie Mellon University
Learn Lab, Advisor: Kenneth R. Koedinger; Mentor: Paulo Carvalho

10/2019 - 12/2020 **Independent Study Research Assistant**
Carnegie Mellon University
McLearn Lab, Advisor**:** Bruce M. McLaren; Mentor: J Elizabeth Richey

Invited Presentations & Service

11/2023 **Koli Calling 2023:** Understanding the Effects of Using Parsons Problems to Scaffold Code Writing for Students with Varying CS Self-Efficacy Levels

04/2023 **2023 CRA-WP Grad Cohort for Women:** Helping Novice Programmers to Write Code in an Introductory Programming Class: The Effects of Using Adaptive Parsons problems as Scaffolding

08/2022 **ICER 2022:** Using Adaptive Parsons Problems to Scaffold Write-Code Problems.

07/2020 **AIED 2020**: Exploring How Gender and Enjoyment Impact Learning in a Digital Learning Game.

07/2020 **EDM 2020**: Moving beyond Test Scores: Analyzing the Effectiveness of a Digital Learning Game through Learning Analytics.

07/2020 **Session Chair**
13th International Conference on Educational Data Mining

Honors And Awards

2023 UMSI Funding Conference Travel Grant ($2500)

2022 Rackham Conference Travel Grant ($1150)

2019 Carnegie Mellon University Merit Scholarship Recipient
Nanjing University Outstanding Graduate
Nanjing University Outstanding Undergraduate Thesis Award

2017 National Scholarship Recipient (0.2%)

Skills and Tools

Data Science	Python, R, STATA, SPSS, Data Mining, Applied Machine Learning
Development	Python, HTML5/CSS3, JavaScript, Bootstrap, Vue.js, Django, AJAX, C#, Unity (3D)
Qualitative methods	Cognitive Task Analysis, Backward Design, Contextual Inquiry, Affinity Diagramming, Usability Testing, Survey Design, User Interview
Quantitative methods	Statistics testing, A/B Testing, Experiment Design
Design	Figma, Vioceflow Sketching, Personas, Storyboarding, Prototyping