


PEER-REVIEWED PUBLICATIONS

Journal Papers

- J3** **Huy A. Nguyen**, Xinying Hou, J. Elizabeth Richey, Bruce M. McLaren (2022). The Impact of Gender in Learning with Games: A Consistent Effect in a Math Learning Game. *International Journal of Game-Based Learning (IJGBL)*, 12(1), 1-29.
- J2** Bruce M. McLaren, J. Elizabeth Richey, **Huy A. Nguyen**, Xinying Hou (2022). How instructional context can impact learning with educational technology: Lessons from a study with a digital learning game. *Computers & Education*, 178, 104366.
- J1** Xinying Hou, **Huy A. Nguyen**, J. Elizabeth Richey, Erik Harpstead, Jessica Hammer, Bruce M. McLaren (2022). Assessing the Effects of Open Models of Learning and Enjoyment in a Digital Learning Game. *International Journal of Artificial Intelligence in Education*, pp. 120–150.

Conference Papers

- C28**  **Huy A. Nguyen**, Hayden Stec, Xinying Hou, Sarah Di, Bruce M. McLaren. Evaluating ChatGPT's Decimal Skills and Feedback Generation in a Digital Learning Game. In *Proceedings of the European Conference on Technology Enhanced Learning*, pp. 278–293. **[Best Paper Award]**
- C27** **Huy A. Nguyen**, Nicole Else-Quest, J. Elizabeth Richey, Jessica Hammer, Sarah Di, Bruce M. McLaren. Gender Differences in Learning Game Preferences: Results Using a Multi-dimensional Gender Framework (2023). To appear in *Proceedings of the International Conference on Artificial Intelligence in Education*, pp. 553–564
- C26** **Huy A. Nguyen**, Xinying Hou, Hayden Stec, Sarah Di, John Stamper, Bruce M. McLaren. Examining the Learning Benefits of Different Types of Prompted Self-explanation in a Decimal Learning Game (2023). In *Proceedings of the International Conference on Artificial Intelligence in Education*, pp. 681–687.
- C25** Steven Moore, **Huy A. Nguyen**, Tianying Chen, John Stamper (2023). Assessing the Quality of Multiple-Choice Questions Using GPT-4 and Rule-Based Methods. In *Proceedings of the European Conference on Technology Enhanced Learning*, pp. 229–245.
- C24** Steven Moore, Ellen Fang, **Huy A. Nguyen**, John Stamper. Crowdsourcing the Evaluation of Multiple-Choice Questions Using Item-Writing Flaws and Bloom's Taxonomy (2023). In *Proceedings of the ACM Conference on Learning@ Scale*, pp. 25–34.
- C23** Steven Moore, **Huy A. Nguyen**, Norman Bier, Tanvi Domadia, John Stamper (2023). Who Writes Tomorrow's Learning Activities? Exploring Community College Student Participation in Learnersourcing. In *Proceedings of the International Conference of the Learning Sciences*.
- C22** Bruce M. McLaren, J. Elizabeth Richey, **Huy A. Nguyen**, Michael Mogessie. A Digital Learning Game for Mathematics that Leads to Better Learning Outcomes for Female Students: Further Evidence (2022). In *Proceedings of the European Conference on Game-based Learning*, pp. 339–384.
- C21** **Huy A. Nguyen**, Shravya Bhat, Steven Moore, John Stamper. Towards Generalized Methods for Automatic Question Generation in Educational Domains (2022). In *Proceedings of the European Conference on Technology Enhanced Learning*, pp. 272–284.

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- C20** Steven Moore, **Huy A. Nguyen**, John Stamper. Assessing the Quality of Student-Generated Short Answer Questions (2022). In *Proceedings of the European Conference on Technology Enhanced Learning*, pp. 243–257.
- C19** Steven Moore, **Huy A. Nguyen**, John Stamper. Participation and Success with Optional Self-Explanation for Students in Online Undergraduate Chemistry Courses (2022). In *Proceedings of the International Conference of the Learning Sciences*, pp. 1381–1384.
- C18** Steven Moore, **Huy A. Nguyen**, John Stamper. Leveraging Students to Generate Skill Tags that Inform Learning Analytics (2022). In *Proceedings of the International Conference of the Learning Sciences*, pp. 791–798.
- C17** Sreecharan Sankaranarayanan, Lanmingqi Ma, Siddharth Reddy Kandimalla, Ihor Markevych, **Huy A. Nguyen**, R. Charles Murray, Christopher Bogart, Michael Hilton, Majd Sakr, Carolyn Rose (2022). Reflection “in the flow” of Collaborative Programming: Designing Efficient and Effective Collaborative Learning Activities in Advanced Computer Science Contexts. In *Proceedings of the International Conference on Computer-supported Collaborative Learning*, pp. 67–74.
- C16** **Huy A. Nguyen**, Zsofia K. Takacs, Enikő Bereczki, J. Elizabeth Richey, Michael Mogessie and Bruce McLaren. Investigating the Effects of Mindfulness Meditation on a Digital Learning Game for Mathematics (2022). In *Proceedings of the International Conference on Artificial Intelligence in Education*, pp. 762–767.
- C15** Bruce M. McLaren, J. Elizabeth Richey, **Huy A. Nguyen**, Michael Mogessie. Focused Self-Explanations Lead to the Best Learning Outcomes in a Digital Learning Game (2022). In *Proceedings of the International Conference of the Learning Sciences*, pp. 1229–1232.
- C14**  Na Li, Guillermo Rodriguez, Yuqiao Xu, Parth Bhatt, **Huy A. Nguyen**, Alex Serpi, Chunhua Tsai, John Carroll. Picturing One’s Self: Camera Use in Zoom Classes during the COVID-19 Pandemic (2022). In *Proceedings of the Ninth ACM Conference on Learning@ Scale*, pp. 151–162. **[Best Paper Award]**
- C13** **Huy A. Nguyen**, Yuqing Guo, Vy Nguyen, J. Elizabeth Richey, Bruce M McLaren. Evaluating a Framework for Learning Problem-Solving Flexibility in Non-routine Mathematics (2022). In *Proceedings of the International Conference of the Learning Sciences*, pp. 1249–1252.
- C12** **Huy A. Nguyen**, Jake M Hofman, Daniel G Goldstein (2022). Round Numbers Can Sharpen Cognition. In *Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems*, pp. 1–15.
- C11** Steven Moore, **Huy A. Nguyen**, John Stamper. Examining the Effects of Student Participation and Performance on the Quality of Learnersourcing Multiple-Choice Questions (2021). In *Proceedings of the Eighth Annual ACM Conference on Learning at Scale*, pp. 209-220.
- C10** **Huy A. Nguyen**, Michelle Lim, Steven Moore, Majd Sakr, Eric Nyberg, John Stamper (2021). Exploring Metrics for the Analysis of Code Submissions in an Introductory Data Science Course). In *Proceedings of the 11th International Conference on Learning Analytics & Knowledge*, pp. 632–638.
- C9**  Steven Moore, **Huy A. Nguyen**, John Stamper (2020). Utilizing Crowdsourcing and Topic Modeling to Generate Knowledge Components for Math and Writing Problems. In *Proceedings of the International Conference on Computers in Education*, pp. 31–40. **[Best Technical Design Paper Nomination]**

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- C8** **Huy A. Nguyen**, Xinying Hou, John Stamper, Bruce M. McLaren (2020). Moving beyond Test Scores: Analyzing the Effectiveness of a Digital Learning Game through Learning Analytics. In *Proceedings of the International Conference on Educational Data Mining*, pp. 487–495.
- C7** Steven Moore, **Huy A. Nguyen**, John Stamper (2020). Evaluating Crowdsourcing and Topic Modeling in Generating Knowledge Components from Explanations. In *Proceedings of the International Conference on Artificial Intelligence in Education*, pp. 398–410.
- C6** Xinying Hou, **Huy A. Nguyen**, J. Elizabeth Richey, Bruce M. McLaren (2020). Exploring How Gender and Enjoyment Impact Learning in a Digital Learning Game. In *Proceedings of the International Conference on Artificial Intelligence in Education*, pp. 255–268.
- C5** **Huy A. Nguyen**, Yeyu Wang, John Stamper, Bruce M McLaren (2019). Using Knowledge Component Modeling to Increase Domain Understanding in a Digital Learning Game. In *Proceedings of the International Conference on Educational Data Mining*, pp. 139–148.
- C4** Yeyu Wang, **Huy A. Nguyen**, Erik Harpstead, John Stamper, Bruce M McLaren (2019). Learning and Enjoyment in an Educational Game: Does Order of Play Matter? In *Proceedings of the International Conference on Artificial Intelligence in Education*, pp. 518–531.
- C3** Erik Harpstead, J Elizabeth Richey, **Huy A. Nguyen**, Bruce M McLaren (2019). Exploring the Subtleties of Agency and Indirect Control in Digital Learning Games. In *Proceedings of the International Conference on Learning Analytics & Knowledge*, pp. 121–129. **[Best Paper Award Nomination]**
- C2** **Huy A. Nguyen**, Erik Harpstead, Yeyu Wang, Bruce M McLaren (2018). Student Agency and Game-Based Learning: A Study Comparing Low and High Agency. In *Proceedings of the International Conference on Artificial Intelligence in Education*, pp. 338-351.
- C1** **Huy A. Nguyen**, Chun W Liew (2018). Using Student Logs to Build Bayesian Models of Student Knowledge and Skills. In *Proceedings of the International Conference on Educational Data Mining*, pp. 397-403.

Posters

- P7** Shravya Bhat, **Huy A. Nguyen**, Steven Moore, John Stamper. Towards Automated Generation and Evaluation of Questions in Educational Domains (2022). In *Proceedings of the 15th International Conference on Educational Data Mining*, pp. 701–704.
- P6** Steven Moore, **Huy A. Nguyen**, John Stamper (2020). Crowdsourcing the Identification of Knowledge Components. In *Proceedings of the Seventh (2020) ACM Conference on Learning@ Scale*, pp. 245-248.
- P5** Steven Moore, **Huy A. Nguyen**, John Stamper (2020). Crowdsourcing Explanations for Improving Assessment Content and Identifying Knowledge Components. In *Proceedings of the 15th International Conference of the Learning Sciences*, pp. 2627–2628.
- P4** Cheyeon Ha, Xinying Hou, **Huy A. Nguyen**, Judith Odili Uchidiuno (2020). Increasing Children’s Knowledge of Pattern Detection and Skip Counting Using a Tablet-based Math Activity. In *Proceedings of the 15th International Conference of the Learning Sciences*, pp. 1725–1726.

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- P3 Chun W Liew, **Huy A. Nguyen** (2019). Using an Intelligent Tutoring System to Teach Red Black Trees. In *Proceedings of the 50th ACM Technical Symposium on Computer Science Education*. New York, NY, USA.
 - P2 **Huy A. Nguyen**, Chun W Liew (2018). Building Student Models in a Non-scaffolded Testing Environment. In *Proceedings of the International Conference on Intelligent Tutoring Systems*, pp. 454–456.
 - P1 Chun W Liew, **Huy A. Nguyen**, Darren J Norton (2017). Assessing Student Answers to Balanced Tree Problems. In *Proceedings of the International Conference on Artificial Intelligence in Education*, pp. 532–535.

Doctoral Consortium / Workshop Papers

- W3 **Huy A. Nguyen**, Shravya Bhat, Steven Moore, John Stamper (2022). Towards Automated Generation and Evaluation of Questions in Educational Domains. In the *Second Workshop on Bridging Human-Computer Interaction and Natural Language Processing (NAACL 2022)*.
- W2 **Huy A. Nguyen**, Yuqing Guo, John Stamper, Bruce M McLaren (2020). Improving Students’ Problem-solving Flexibility in Non-routine Mathematics. In *Proceedings of the International Conference on Artificial Intelligence in Education*, pp. 409–413.
- W1 **Huy A. Nguyen**, John Stamper, Bruce M McLaren (2019). Towards Modeling Students’ Problem-solving Skills in Non-routine Mathematics Problems. In the *International Conference on Educational Data Mining*.

Tutorial and Workshop Organization

- O1 Adele Smolansky, **Huy A. Nguyen**, Rene F. Kizilcec, Bruce M. McLaren (2023). Equity, Diversity, and Inclusion in Educational Technology Research and Development. In *Proceedings of the International Conference on Artificial Intelligence in Education*, pp. 57–62.

Book Chapters

- B2 Vincent Alevan, Manolis Mavrikis, Bruce M. McLaren, **Huy A. Nguyen**, Jennifer Olsen, Nikol Rummel. Six instructional approaches supported in AIED systems: What does AIED bring to the table? In the *Handbook of Artificial Intelligence in Education*, pp 184–228.
- B1 Bruce M. McLaren, **Huy A. Nguyen**. AIED Digital Learning Games: Where We Are and How We Might Make a Bigger Impact. In the *Handbook of Artificial Intelligence in Education*, pp. 440–484.

GRANTS AND FELLOWSHIPS

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| G1 | Examining the Effect of Gender and Game Narrative on Learning and Enjoyment from Digital Learning Games
PI, with Bruce M. McLaren | Simon Initiative Seed Grant
\$15,000 |
| G2 | Initial Steps Toward Developing a Digital Learning Game to Help Students Become Flexible Problem Solvers
PI, with J. Elizabeth Richey and Bruce M. McLaren | Simon Initiative Seed Grant
\$15,000 |

TEACHING AND MENTORING EXPERIENCE

Research Mentoring

Mentee	Program	Co-authored Publications
Shravya Bhat	Master of Computational Data Science → AI Software Engineer at Boston Consulting Group Gamma	P7, W3, C22
Vy Nguyen	Bachelor of Computer Science (Williams College) → Master of Computer Science at Carnegie Mellon University	C14
Xinying Hou	Master of Educational Technology and Applied Learning Science → PhD student at University of Michigan	J1, J2, J3, C7, C9, C26, C28, P4
Yuqing Guo	Master of Educational Technology and Applied Learning Science → User Experience Designer at Deloitte	W2, C14
Michelle Lim	Bachelor in Information Systems & Statistics'20 → Software Engineer at Appian	C11
Yeyu Wang	Master of Educational Technology and Applied Learning Science → PhD student at University of Wisconsin-Madison	C3, C5, C6

Teaching Assistant

Foundations of Computational Data Science (Summer 2020 - Summer 2022)
Programming Usable Interfaces (Fall 2022)

Guest Lecturer

Interactive Data Science (Fall 2021, Fall 2022)

ACADEMIC SERVICES

Program Committee:

International Conference on Learning Analytics & Knowledge (LAK'23)
International Conference of the Learning Sciences (ICLS'22)
International Conference on Artificial Intelligence in Education (AIED'23, AIED'24)

Reviewer:

International Conference on Educational Data Mining (EDM'19, EDM'20, EDM'22)
International Conference on Computers in Education (ICCE'20)
International Conference on Learning Analytics & Knowledge (LAK'23)
ACM CHI Conference on Human Factors in Computing (CHI'23)
Journal of Research and Practice in Technology Enhanced Learning
Journal of Learning Analytics
British Journal of Educational Technology
Computers & Education
IEEE Transactions on Learning Technologies

Conference Volunteer:

International Conference on Artificial Intelligence in Education (AIED'18, AIED'19)

International Conference of the Learning Sciences (ICLS'18)
Annual ACM Conference on Learning at Scale (L@S'18).

AWARDS AND HONORS

- **Best Paper Award:** International Conference on Learning at Scale (2022), European Conference on Technology Enhanced Learning (2023).
- **MCDS Student Teaching Award (2022):** Awarded to the most outstanding student instructor for courses taught in the Masters of Computational Data Science program at Carnegie Mellon University.
- **Best Paper Award Nominations:** International Conference on Learning Analytics & Knowledge (2020).
- **Doctoral Consortium Fellowship (2019):** International Conference on Educational Data Mining
- **Honor Societies (2017):** Upsilon Pi Epsilon (Computer Science), Pi Mu Epsilon (Mathematics).
- **ACM International Collegiate Programming Contest (2016):** Ranked second among teams in the Mid-Atlantic region at Wilkes University.
- **Putnam Competition (2014):** Ranked 716/4320 in the nationwide undergraduate math competition.

SKILLS

- **Languages:** Python, Bash, HTML + CSS + JavaScript ES6, Java, SQL, Scala, R, LaTeX.
- **Frameworks & Tools:** NumPy, Pandas, PyTorch, Spark, Scikit-learn, Docker, Azure, Jupyter.
- **Research Methods:** Statistics, Experimental Studies, A/B Testing, Data Mining.