

Steven Moore

HCI Researcher / Learning Engineer / Teacher

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Education

Carnegie Mellon University Pittsburgh, PA	School of Computer Science, HCII PhD Candidate, Human Computer Interaction	8/2018 – Present
Carnegie Mellon University Pittsburgh, PA	School of Computer Science, HCII Masters in Educational Technology and Applied Learning Science	8/2015 – 8/2016 GPA: 3.93 / 4.0
Georgia Institute of Technology Atlanta, GA	School of Computer Science Bachelor of Science in Computer Science <i>Thesis: Designing an Effective Interactive E-book for Computer Science Education</i>	8/2010 – 12/2014 GPA: 3.65 / 4.0

Research Experience

Human Centered Data Lab Carnegie Mellon University 08/2018 - Present	<ul style="list-style-type: none">Researching and developing activities as part of a greater workflow that leverages data from learners and crowd workers to make course improvements <i>Advisor: John Stamper</i>
Natural Programming Lab Carnegie Mellon University 12/2015 – 9/2016	<ul style="list-style-type: none">Performed curriculum review, code repository analysis, and user studies to help develop a tool to assist programmers in understanding exception handling code <i>Advisor: Brad Myers</i>
Contextualized Learning Lab Georgia Tech 5/2014 – 12/2014	<ul style="list-style-type: none">Conducted two studies to measure the usability of educational computer science e-books and the learning improvements teachers made from using them <i>Advisor: Mark Guzdial</i>
Cognitive Ergonomics Lab Georgia Tech 5/2013 – 12/2013	<ul style="list-style-type: none">Carried out user observations and log file analysis to make data-informed programming improvements to an air-traffic controller research simulator <i>Advisor: Frank Durso</i>

Professional Experience

Graduate Teaching Fellow Eberly Center, CMU 01/2019 – present	<ul style="list-style-type: none">Conduct classroom observations to provide data-driven feedback to instructorsWork with clients to construct and revise statements of teaching philosophyLead microteaching workshops to provide instructors with teaching feedback
Learning Engineer Eberly Center, CMU 11/2016 – 08/2018	<ul style="list-style-type: none">Support faculty in incorporating technology-enhanced learning in their coursesCreate and improve computer science courses at the undergrad and grad levelDevelop interactive tools to assist faculty in teaching across all domains
Graduate Student Mentor Carnegie Mellon University 1/2017 – 8/2020	<ul style="list-style-type: none">Coached capstone teams, guiding the completion of their capstone projectsTaught project management, collaboration, communication, and research skillsProvided programming and system architecture experience for two projects
R&D Consulting Manager	<ul style="list-style-type: none">Managed an interdisciplinary team conducting research and programming

- Western Governors University 1/2016 – 9/2016
 - Developed an Android app to deliver small segments of learning
 - Utilized both quantitative and qualitative data collection methodologies
- Full-Stack Web Developer** Westat 8/2012 – 11/2016
 - Designed and developed frontend websites to meet various clients' needs
 - Programmed substantial backend systems and managed extensive databases
 - Worked on Android & iOS apps for conducting surveys and location tracking

Publications

Conference Papers

- [8] **Moore, S.**, Nguyen, H. A., & Stamper, J. (Under Review). "Examining the Effects of Student Participation and Performance on the Quality of Learnersourcing Multiple-Choice Questions". Submitted to the *International Conference on Learning Analytics & Knowledge*
- [7] **Moore, S.**, Nguyen, H. A., & Stamper, J. (2020, November). "Utilizing Crowdsourcing and Topic Modeling to Generate Knowledge Components for Math and Writing Problems". In *Proceedings of the International Conference on Computers in Education*, forthcoming. **[Best Technical Paper Award]**
- [6] **Moore, S.**, Nguyen, H. A., & Stamper, J. (2020, August). "Towards Crowdsourcing the Identification of Knowledge Components". In *Proceedings of the Seventh ACM Conference on Learning @ Scale*, pp. 245-248.
- [5] **Moore, S.**, Nguyen, H. A., & Stamper, J. (2020, July). "Evaluating Crowdsourcing and Topic Modeling in Generating Knowledge Components from Explanations". In *International Conference on Artificial Intelligence in Education*, pp. 398-410.
- [4] **Moore, S.**, Stamper, J., Bier, N., & Blink, M. J. (2020, February). "A Human-Centered Approach to Data Driven Iterative Course Improvement". In *International Conference on Remote Engineering and Virtual Instrumentation*, pp. 742-761.
- [3] Stamper, J., & **Moore, S.** (2019, June). "Exploring Teachable Humans and Teachable Agents: Human Strategies Versus Agent Policies and the Basis of Expertise". In *International Conference on Artificial Intelligence in Education*, pp. 269-274.
- [2] **Moore, S.**, & Stamper, J. (2019, June). "Decision support for an adversarial game environment using automatic hint generation". In *International Conference on Intelligent Tutoring Systems*, pp. 82-88. **[Best Paper Award]**
- [1] Kistner, F., Kery, M. B., Puskas, M., **Moore, S.**, & Myers, B. A. (2017, October). "Moonstone: Support for understanding and writing exception handling code". In *2017 IEEE Symposium on Visual Languages and Human-Centric Computing*, pp. 63-71.

Posters

- [1] **Moore, S.**, Nguyen, H. A., & Stamper, J. (2020, June). "Crowdsourcing explanations for improving assessment content and identifying knowledge components". In *Proceedings of the Seventh 14th International Conference of the Learning Sciences*, pp. 2627-2628.

Workshop Papers

- [5] **Moore, S.** & Stamper, J. (2019, July). "Exploring Expertise through Visualizing Agent Policies and Human Strategies in Open-Ended Games". In *Workshop on EDM & Games at 12th International Conference on Educational Data Mining*, pp. 30-37.
- [4] Gadgil, S., **Moore, S.**, & Stamper, J. (2019, March). "How does Performance in an Online Primer Predict Achievement in a Future Computer Science Course". In *Companion Proceedings 9th International Conference on Learning Analytics & Knowledge*, pp. 300-306.
- [3] Bier, N., **Moore, S.**, & Van Velsen, M. (2019, March). "Instrumenting courseware and leveraging data with the Open

Learning Initiative (OLI)". In *Companion Proceedings 9th International Conference on Learning Analytics & Knowledge*, pp. 990-1001.

[2] **Moore, S.**, Stamper, J., & Gadgil, S. (2019, March). "Human-Centered Data Science for Educational Technology Improvement using Crowd Workers". In *Companion Proceedings 9th International Conference on Learning Analytics & Knowledge*, pp. 341-347.

[1] Ericson, B., **Moore, S.**, Morrison, B., & Guzdial, M. (2015, November). "Usability and usage of interactive features in an online ebook for CS teachers". In *Proceedings of the Workshop in Primary and Secondary Computing Education*, pp. 111-120.

Teaching

Introductory Programming for Master's in HCI (Instructor) Summer 2019, 2020
Developed the full curriculum, taking students from Python to JavaScript

Interactive Data Science (Teaching Assistant) Spring 2018, 2020; Fall 2018, 2019
Led office hours, graded student work, and created weekly course projects

Mentorship

Master of Computational Data Science (MCDS) - Capstone
2 students, *Automated Concept Hierarchy Generation from Textbooks* 2020
3 students, *An Approach Towards Automating the Extraction of Higher-Order Strategies* 2019

Master of Educational Technology and Applied Learning Science (METALS) - Capstone
5 students, *Pangolin: A Facilitative Learning Platform for Programming Education* 2020
5 students, *An Interactive Storytelling Workflow to Help Students Become Fluent Readers* 2018
4 students, *Vittore: A Chat Bot to Assist Teachers in the Goal-Setting Process* 2017

Service

Reviewer
International Conference On Computers In Education (ICCE) 2020
Educational Data Mining (EDM) 2019, 2020
Learning Analytics and Knowledge (LAK) 2019

Volunteer
Artificial Intelligence in Education (AIED) 2019

Advisory Board
Carnegie Mellon University Teaching & Learning Summit 2018, 2019, 2020

Funding

Community Sourced, Data-Driven Improvements to Open, Adaptive Courseware (Grant) 2019 - 2023
California Education Learning Lab

Open Educational Resources (OER) Fellow 2019 - 2020
William and Flora Hewlett Foundation

Program in Interdisciplinary Education Research (PIER) 2018 - 2022
Institute of Education Sciences

Skills

Programming: Python, C#, Java, R, JavaScript + HTML + CSS, SQL

Technologies: Numpy, Pandas, Scikit-learn, Spacy, Gensim, NLTK, BeautifulSoup, D3, Tableau, Bootstrap, jQuery, Git

Research: A/B testing, Qualitative Coding, Survey Design, Contextual Inquiry, Storyboarding, Cognitive Task Analysis