Xu Wang   Curriculum Vitæ

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Ann Arbor, MI 48109

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Academic Positions

01/2021 –   **University of Michigan, Ann Arbor**
Assistant Professor, Computer Science and Engineering

09/2020 –
12/2020   **Carnegie Mellon University**
Postdoctoral Fellow, Human-Computer Interaction Institute, School of Computer Science

Education

08/2014 –
08/2020   **Carnegie Mellon University**
Ph.D. in Human-Computer Interaction
School of Computer Science
Thesis: Harnessing Student Solutions to Support Learning at Scale
Advisor: Kenneth R. Koedinger and Carolyn P. Rose
Committee: Jeffrey P. Bigham, Chinmay Kulkarni, and Scott Klemmer

08/2013 –
06/2014   **Harvard University**
Master of Education in Technology, Innovation and Education
Graduate School of Education
Advisor: Christopher Dede

09/2009 –
06/2013   **Beijing Normal University**
Bachelor of Science in Educational Technology
School of Educational Technology
Minored in Mathematics, School of Mathematical Sciences

08/2011 –
02/2012   **University of Manchester**
Exchange Program in Accounting and Finance
Manchester Business School

Peer-Reviewed Conference and Journal Papers

In Human-Computer Interaction, Educational Technologies and related Computer Science domains, the top-tier publication venues include CHI, Learning@Scale, AIED, CSCW, etc., where papers are rigorously blind peer reviewed and typically have an acceptance rate of 20-30%.

[**C.21**] Xinyi Lu, Simin Fan, Jessica Houghton, Lu Wang, **Xu Wang**. ReadingQuizMaker: A Human-NLP Collaborative System that Supports Instructors to Design High-Quality Reading Quiz Questions (to appear). In *Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems (***CHI 2023***)* **Best Paper Honorable Mention**.

[**C.20**] Xinyue Chen, **Xu Wang**. Scaling Mixed-Methods Formative Assessments in Classrooms: A Clustering Pipeline to Identify Student Knowledge. In *Proceedings of the 23rd International Conference on Artificial Intelligence in Education (***AIED 2022***)*

[**C.19**] **Xu Wang**, Simin Fan, Jessica Houghton, Lu Wang. Towards Process-Oriented, Modular, and Versatile Question Generation that Meets Educational Needs. In *Proceedings of 2022 Annual Conference of the North American Chapter of the Association for Computational Linguistics (***NAACL 2022***)*

[**C.18**] Xinying Hou, Barbara Ericson, **Xu Wang**. Using Adaptive Parsons Problems to Scaffold Write-Code Problems. In *ACM Conference on International Computing Education Research 2022 (***ICER 2022***)*

[**C.17**] **Xu Wang**, Carolyn Rose, Kenneth Koedinger. Seeing Beyond Expert Blind Spots: Online Learning Design for Scale and Quality. In *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems (***CHI 2021***)*

[C.16] **Xu Wang**, Meredith Thompson, Kexin Yang, Dan Roy, Kenneth Koedinger, Carolyn Rose, Justin Reich. Practice-Based Teacher Education with ELK: A Role-Playing Simulation for Eliciting Learner Knowledge. In *Proceedings of the ACM on Human-Computer Interaction (***CSCW 2021***)*.

[C.15] Hong Shen, Wesley Deng, Aditi Chattopadhyay, Steven Wu, **Xu Wang**, Haiyi Zhu. Value Cards: An Educational Toolkit for Teaching Social Impacts of Machine Learning through Deliberation. In *Proceedings of the 2021 ACM conference on fairness, accountability, and transparency (***FaccT 2021***)*.

[C.14] Xinyue Chen, Si Chen, **Xu Wang**, Yun Huang. (2020) "I was afraid, but now I enjoy being a streamer!": Understanding the Challenges and Prospects of Using Live Video Streaming for Online Education. In *Proceedings of the ACM on Human-Computer Interaction (***CSCW 2020***)*. **Best Paper Honorable Mention**.

[C.13] **Xu Wang**, Srinivasa Talluri, Carolyn Rose, Kenneth Koedinger. UpGrade: Sourcing Student Open-Ended Solutions to Create Scalable Learning Opportunities. In *Proceedings of the sixth ACM Conference on Learning@Scale (***L@S 2019***)*. Chicago, IL. 2019.

[C.12] **Xu Wang**, Benjamin Lafreniere, Tovi Grossman. Leveraging Community-Generated Videos and Command Logs to Classify and Recommend Software Workflows. In *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems (***CHI 2018***)*. Montréal, Canada. 2018.

[C.11] **Xu Wang**, Yali Chen, Amanda Godley, Carolyn Rose. Public Peer Review Motivates Higher Quality Feedback. In *Proceedings of the 13th International Conference of the Learning Sciences (***ICLS 2018***)*. International Society of the Learning Sciences. London, United Kingdom. 2018.

[C.10] Sree Sankaranarayanan, Cameron Dashti, Chris Bogart, **Xu Wang**, Majd Sakr, Carolyn Rose. When Optimal Team Formation is a Choice – Self-Selection versus Intelligent Team Formation Strategies in a Large Online Project-Based Course. In *Proceedings of the 19th International Conference on Artificial Intelligence in Education (***AIED 2018***)*. London, United Kingdom. 2018.

[C.9] Anhong Guo, Saige McVea, **Xu Wang**, Patrick Clary, Ken Goldman, Yang Li, Yu Zhong, Jeffrey Bigham. Investigating Cursor-based Interactions to Support Non-Visual Exploration in the Real World. In *Proceedings of the ACM SIGACCESS Conference on Computers and Accessibility (***ASSETS 2018***)*. Galway, Ireland. 2018.

[C.8] **Xu Wang**, Miaomiao Wen, Carolyn Rose. Contrasting Explicit and Implicit Scaffolding for Transactive Exchange in Team Oriented Project Based Learning. In *Proceedings of the 12th International Conference on Computer Supported Collaborative Learning (***CSCL 2017***)*. International Society of the Learning Sciences. Philadelphia, PA. 2017.

[C.7] **Xu Wang**, Miaomiao Wen, Carolyn Rose. Towards Triggering Higher-order Thinking Behaviors in MOOCs. In *Proceedings of the Sixth International Conference on Learning Analytics & Knowledge (***LAK 2016***)*. Edinburgh, Scotland. 2016.

[C.6] Miaomiao Wen, Keith Maki, **Xu Wang**, Steven Dow, James Herbsleb, Carolyn Rose. Transactivity as a Predictor of Future Collaborative Knowledge Integration in Team-Based Learning in Online Courses. In *Proceedings of the 8th International Conference on Educational Data Mining (***EDM 2016***)*. International Society of the Learning Sciences. Raleigh, NC. 2016.

[C.5] Gaurav Tomar, Sree Sankaranarayanan, **Xu Wang**, Carolyn Rose. Coordinating Collaborative Chat in Massive Open Online Courses. In *Proceedings of the 12th International Conference of the Learning Science (***ICLS 2016***)*. International Society of the Learning Sciences. Singapore. 2016.

[C.4] **Xu Wang**, Diyi Yang, Miaomiao Wen, Kenneth Koedinger, Carolyn Rose. Investigating How Student's Cognitive Behaviors in MOOC Discussion Forums Affect Learning Gains. In *Proceedings of the 8th International Conference on Educational Data Mining (***EDM 2015***)*. International Educational Data Mining Society. Madrid, Spain. 2015.

[C.3] Su Cai, **Xu Wang**, Feng-Kuang Chiang. A case study of Augmented Reality simulation system application in a chemistry course. *Computers in Human Behavior*. 37(8), 31-40. 2014.

[C.2] Su Cai, Feng-Kuang Chiang, **Xu Wang**. Using the Augmented Reality 3D Technique for a Convex Imaging Experiment in a Physics Course. *International Journal of Engineering Education*, 29(4), 856-865. 2013.

[C.1] Su Cai, **Xu Wang**, Mengnan Gao, Shengquan Yu. Simulation Teaching in 3D Augmented Reality Environment. In *Proceedings of the IIAI International Conference on Advanced Applied Informatics (***IIAI AAI 2012***)*. IEEE Computer Society. Fukuoka, Japan. 2012.

Workshop, Symposia, Consortia, and Extended Abstracts

[A.6] Vitaliy Popov, Jingying Wang and **Xu Wang**. Leveraging Eye-Gaze Data to Augment Surgical Faculty-Resident Postoperative Case Video Analysis. In *the 2023 Annual Surgeons and Engineers*.

[A.5] Vitaliy Popov, Xinyue Chen, Michael Kemp, Gurjit Sandhu, Taylor Kantor, Natalie Mateju, and **Xu Wang**. Towards Supporting Intraoperative Coordination and Entrustment in Surgical Faculty-Resident Dyads: Looking Together ≠ Seeing the Same Thing. In *Proceedings of the 2022 CHI Conference Extended Abstracts on Human Factors in Computing Systems (***CHI 2022 Late Breaking Work***)*.

[A.4] Sreecharan Sankaranarayanan, **Xu Wang**, Cameron Dashti, Marshall An, Clarence Ngoh, Majd Sakr, and Carolyn Rose. An Intelligent-Agent Facilitated Scaffold for Fostering Reflection in a Team-Based Project Course. In *Proceedings of the 20th International Conference on Artificial Intelligence in Education (***AIED 2019 Poster***)*. Chicago, IL. 2019.

[A.3] Sreecharan Sankaranarayanan, Cameron Dashti, Christopher Bogart, **Xu Wang**, Majd Sakr, Michael Hilton, Carolyn Rose. Group formation in the digital age: Relevant characteristics, their diagnosis, and combination for productive collaboration. In *Proceedings of the 13th International Conference on Computer-Supported Collaborative Learning (***CSCL 2019 Symposium***)*. Lyon, France. 2019.

[A.2] Sreecharan Sankaranarayanan, **Xu Wang**, Cameron Dashti, Haokang An, Claernce Ngoh, Michael Hilton, Majd Sakr, and Carolyn Rose. Online Mob Programming: Bridging the 21st Century Workplace and the Classroom. In *Proceedings of the 13th International Conference on Computer-Supported Collaborative Learning (***CSCL 2019 Poster***)*. Lyon, France. 2019.

[A.1] **Xu Wang**. Public Peer Review for Collaborative Learning in MOOCs. In *Proceedings of the 12th International Conference on Computer Supported Collaborative Learning (***CSCL 2017 Doctoral Consortium***)*. Philadelphia, PA. 2017.

Patents

[P.1] Tovi Grossman, Benjamin Lafreniere, **Xu Wang**. Leveraging Community-Generated Videos and Command Logs to Classify and Recommend Software Workflows. U.S. Patent Application, filed March 24, 2018.

Awards and Honors

2020 **Honorable Mention Award CSCW'20**

2019 **Selected to participate in the 2019 EECS Rising Stars Workshop**

2019 **NSF I-Corps @CMU Program for project UpGrade ($2.5K)**

2017 **CSCL 2017 Doctoral Consortium Travel Grant**

Teaching

Primary Instructor

EECS493: User Interface Development
Computer Science and Engineering, University of Michigan
Fall 2021, Fall 2022

EECS498/598: Technologies to Optimize Human Learning
Computer Science and Engineering, University of Michigan
Winter 2021, Winter 2022

Teaching Assistant

2018 **05834: Applied Machine Learning**
School of Computer Science, Carnegie Mellon University
Instructor: Carolyn P. Rose

2017 **05610: User Centered Research & Evaluation**
School of Computer Science, Carnegie Mellon University
Instructors: Amy Ogan, Jim Morris

Professional Experience

05/2017 – **Autodesk Research, Toronto**
08/2017 Research Intern on intelligent learning (UI Research Group)
Mentor: Tovi Grossman
Developed techniques to classify and recommend software workflows leveraging community-generated videos and command logs (*CHI '18*)

05/2016 – **Autodesk, San Francisco**
08/2016 Research Intern on competency modeling
Mentors: Adam Menter, and Alexandra Bergin

02/2014 – **HarvardX, Harvard University**
05/2014 Research Intern on qualitative course comparison

Invited Talks and Presentations

12/2021 **Panel: Learnersourcing at the nexus of human and artificial intelligence**
Invited speaker at the 2021 Empowering Learners in AI conference with panelists Chris Brooks, Shayan Doroudi, and John Stamper

11/2021 - **Human-AI Collaborative Methods for Instructional Design**
Guest Lecture at Worcester Polytechnic Institute hosted by Neil Heffernan
Guest Lecture at University of Vermont hosted by Yuanyuan Feng
Guest Lecture at University of Michigan hosted by Nikola Banovic
Guest Lecture at University of Michigan hosted by Anhong Guo

10/2021 **Sourcing Student Open-Ended Solutions to Create Scalable Learning Opportunities**
Invited Talk, Michigan AI Symposium

9/2021 **Learning Analytics & Education Research Data webinar**
Hosted by PEERS Data Hub, AERA (American Educational Research Association) with panelists Rene Kizilcec, Ben Motz, James Russell

2/2021 **Harnessing Student Solutions to Support Learning at Scale**
The Texas Human-Computer Interaction (TxHCI) Seminar Series (Host: Jeeeun Kim)

Spring 2020 **Harnessing Examples for Learning at Scale**
University of Illinois Urbana-Champaign, Department of Computer Science
University of Michigan, Computer Science and Engineering
Autodesk Research
University of Pittsburgh, School of Computing and Information
University of Wisconsin Madison, Department of Computer Sciences

11/2019 **Building Quality and Scalable Educational Experience through Human-AI Partnership**
University of Minnesota, Learning Informatics Seminar (Host: Sashank Varma, Bodong Chen)

03/2019 **UpGrade: Sourcing Student Open-Ended Solutions to Create Scalable Learning Opportunities**
CMU Guest Lecture, Course 05840: Tools for Online Learning (Host: Chinmay Kulkarni)

04/2017 **Scaling Peer Interaction and Assessment for Better and More Efficient Online Learning**
Ecopia Tech Inc., Toronto (Host: Yuanming Shu)

03/2017 **Discussion-based Interventions in MOOCs**
Building the Learning Analytics Curriculum Workshop at LAK '17, Vancouver

01/2017 **MOOC Forum Analysis Techniques and Collaborative Learning Support**
Beijing Normal University (Host: Shengquan Yu)

Mentoring

Ph.D. Students

08/2021 –   **Xinyue Chen**
Mechanisms to support collaborative learning and work

08/2022 –   **Jingying Wang**
co-advised with Vitaliy Popov

08/2022 –   **Gregory Croisdale**
co-advised with Anhong Guo

01/2023 –   **Christopher Kok**

Master's Students at the University of Michigan

Jingying Wang [03/2022-08/2022] co-advised with Vitaliy Popov.
Next Position: Ph.D. student at the University of Michigan
Zhaoyuan Zhang [08/2021-12/2021]
Erin Deutschman [05/2021-08/2021] co-advised with Barbara Ericson

Undergraduate Students at the University of Michigan

Zirui Zhao[08/2022-]
Haocheng Ren[05/2022-] co-advised with Anhong Guo.
Muzhe Wu[05/2022-] co-advised with Anhong Guo.
Xinyi Lu[05/2022-]
Shuo Li[05/2022-]
Haipeng Xu[05/2022-]
Zeyi Ren[05/2022-]
Zhixuan Chen[05/2022-]
Heyi Xu[05/2022-08/2022]
Jiachun Zhang[05/2022-08/2022]
Jessie Houghton [08/2021-08/2022]
Next Position: Product Manager at Microsoft
Olivia Fan [05/2021-08/2022] co-advised with Lu Wang.
Next Position: Ph.D. student at EPFL
Thomas Hu [01/2022-05/2022] co-advised with Chris Brooks.
Next Position: M.S. student at the University of Michigan
Issac Moothart[08/2021-12/2021] Undergraduate Honors Thesis.
Next Position: M.S. student at the University of Michigan
Matthew Tomaszewski[08/2021-05/2022]
Next Position: M.S. student at the University of Michigan
Trevor Lee [01/2022-05/2022]
Brandon Garzez [08/2021-12/2021]
Lyubing Qiang[05/2021-08/2021] co-advised with Vitaliy Popov
Nithin Weerasinghe[01/2021-05/2021] co-advised with Barbara Ericson

Ph.D. Dissertation Committee

Ryan Burton [TBD], UMSI, Chair: Kevin Collins-Thompson
Cristian-Paul Bara [12/2022], UM CSE, Chair: Joyce Chai

External Ph.D. Students Mentored

Xinying Hou [2021-] University of Michigan
Xiaofei Zhou [2021] University of Rochester

Students Mentored Prior to Michigan

Daniel De Angulo [08/2020-05/2021] Masters student at Carnegie Mellon University
Shipeng Liu[08/2020-01/2021] Undergraduate student at Tongji University.
Next Position: Ph.D. student at the University of Southern California
Xinyue Chen[08/2020-08/2021] Undergraduate student at Peking University.
Next Position: Ph.D. student at the University of Michigan
Alexis Soto[08/2019-12/2019] Undergraduate student at Carnegie Mellon University
Kexin Yang[08/2019-12/2019] Masters student at Carnegie Mellon University.
Next Position: Ph.D. student at Carnegie Mellon University
Teja Talluri[05/2018-05/2019] Masters student at Carnegie Mellon University.
Next Position: Data Scientist at Inspire
Jiaojiao Song[08/2018-12/2018] Masters student at Carnegie Mellon University
Rajitha Pulivarthy[08/2018-12/2018] Undergraduate student at Carnegie Mellon University
Yali Chen[08/2017-05/2018] Masters student at Carnegie Mellon University.
Next Position: Product Manager at Cengage

Service

2022 – **Steering Committee**
ACM Learning@Scale 2023

2020 – **Program Committee**
ACM CHI 2021, 2022, 2023
GCCCE 2021, 2023

2017 – **Journal Reviewer**
AERA Open
Journal of Artificial Intelligence in Education
Journal of American Education Research Association
IEEE Transactions on Emerging Topics in Computing
PLOS One
British Journal of Educational Technology
International Journal of Computer-Supported Collaborative Learning

2017 – **Conference Reviewer**
I regularly review for CHI, L@S, AIED, CSCW, UIST, CSCL, ICLS, EDM, LAK

Last updated: April 7, 2023