Xiaofei Zhou

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Research Interest

Human-Computer Interaction Artificial Intelligence Education for K-12 Educational Game Design
Computer-Supported Collaborative Learning

Education

University of Rochester (UR) 2019-2024 (Expected)
Ph.D. student, Computer Science
Advisor: Dr. Zhen Bai

Carnegie Mellon University (CMU) 2018-2019
Human-Computer Interaction Institute, School of Computer Science
MS in Educational Technology and Applied Learning Sciences
Advisors: Dr. Geoff Kaufman, Dr. Ken Keodinger

Tsinghua University (THU) 2014-2018
B.Eng., Industrial Engineering with Specialization in Human Factors

Publication

Peer-Reviewed Conference and Journal Papers

P2 Xingchen Zhou, Pei-Luen Patrick Rau, Chi-Lan Yang, and **Xiaofei Zhou**. "Cognitive Behavioral Therapy-Based Short-Term Abstinence Intervention for Problematic Social Media Use: Improved Well-Being and Underlying Mechanisms." Psychiatric Quarterly (2020): 1-19.

P1 Xiaoyu Wan, **Xiaofei Zhou**, Zaiqiao Ye, Chase K. Mortensen, and Zhen Bai. "SmileyCluster: supporting accessible machine learning in K-12 scientific discovery." In Proceedings of the Interaction Design and Children Conference, pp. 23-35. 2020. (**IDC 2020**)

Workshop, Symposia, Poster, and Extended Abstracts

A2 Xiaoyu Wan, **Xiaofei Zhou**, Zhen Bai. Demystifying SmileyCluster: Accessible Machine Learning for K-12 Students (**GHC'2020** Poster Session)

A1 **Xiaofei Zhou**, Jingwan Tang, Sufian Mushtaq, Xiaoyu Wan, Zhen Bai. Empowering Teachers to Integrate Machine Learning into K-12 Scientific Discovery. International Workshop on Education In Artificial Intelligence K-12 (**EduAI'2020 Workshop Paper**)

Work in Progress or in Submission

W3 **Xiaofei Zhou**, Jessica Van Brummelen, Phoebe Lin. Designing AI Learning Experiences for K-12: Emerging Works, Future Opportunities and a Design Framework. (Submitted to **CHI'2021**)

W2 Jingwan Tang, **Xiaofei Zhou**, Xiaoyu Wan, Zhen Bai. ML4STEM Professional Development Program: Bridging the Gap between Machine Learning and K-12 STEM Teaching (Submitted to **iJAIED** International Journal of Artificial Intelligence in Education)

W1 Kexin Yang, **Xiaofei Zhou**, Lulian Radu. XR-Ed Framework: Designing Instruction-driven and Learner-centered Extended Reality Systems for Education. (Submitted to **CHI'2021**)

Talks and Presentations

T2 **Empowering Teachers to Integrate Machine Learning into K-12 Scientific Discovery,** International Workshop on Education in Artificial Intelligence K-12 (EDUAI-20), held in conjunction with the International Conference on Artificial Intelligence in Education (AIED-20) 07/2020

T1 **SmileyCluster: supporting accessible machine learning in K-12 scientific discovery,** Interaction Design and Children Conference (IDC-20) 06/2020

Honors and Awards

NSF I-Corps, GoTracker for Project-Based Learning@CMU 2019

Merit Scholarship, CMU ($9000) 2018

Special Award of 36th Challenge Cup, THU 2018

Science and Technology Innovation Award, Department of Industrial Engineering, THU 2018

Outstanding Volunteer for IxDC, International Conference of User Experience Design 2016

Tsinghua University Social Practice Gold Award, THU 2015

Professional Experiences

ASSETS 2019 Oct 2018-2019

Graphic Design Chair

- Designed ASSETS 2019 conference logo, website, and social media logo.

OWLII Mar-July 2018

Product & UX Designer

- Conducted user research, designed interaction, and prototyped with Sketch and Photoshop for Xiatiao Camera.
- Designed and conducted user testing.
- Iterated design for the 2nd version.

Teaching and Volunteer

University of Rochester 2019-Present

Teaching Assistant

- CSC161 Introduction to Programming Spring 2020
- CSC211 Introduction to HCI Fall 2020

Tsinghua University and Local K-12 Schools in Beijing May 2016-Jul 2018

Teaching Volunteer

- Recorded 4 audiobooks for blind children in a special education school.
- Taught Creative Writing for the First Grade students in the Haidian District School of Migrant Laborers 'Children.
- Participated in a pen pal program for children in isolated areas.

Department of Industrial Engineering, Tsinghua University Sept 2015-Dec 2016

Chief editor

Research Experiences

AI4K12: Accessible Machine Learning for K-12 Scientific Discovery Sept 2019-Present

Advisor: Dr. Zhen Bai, Computer Science, University of Rochester

- Designed and created the online technology-enhanced learning environment SmileyDiscovery to support ML-empowered scientific discovery learning for K-12 students.
- Designed and conducted a 2-week co-design research with 18 K-12 teachers.
- Analyzed the data collected from the co-design workshop and submitted a research paper to CHI'2021.

Character Creation Assistance Tool Sept 2018-Present

Advisor: Dr. Geoff Kaufman, Human-Computer Interaction Institute, Carnegie Mellon University

- Created storyboards and conducted speed dating for interactive systems and experiment design.
- Analyzed interaction between 10 creators and 3 readers for prior research.
- Recruited participants for the formal experiment and data collection.

Intelligent Tutoring System for Information Visualization Sept 2018-Sept 2019

Advisor: Dr. Ken Keodinger, Human-Computer Interaction Institute, CMU

- Conducted cognitive task analysis (CTA) with 11 experts and novices.
- Designed a new instructional model for information visualization based on data from CTA.
- Conducted learner testing with 30 participants and verified the effectiveness of the instructional model.

Go-Tracker: Facilitate More Effective Project-Based Learning Sept-Dec 2018

Advisor: Marti Louw, Human-Computer Interaction Institute, CMU

- Interviewed 8 experts and stakeholders.
- Collaborated with a local high school in Pittsburgh and observed classrooms in context.
- Created storyboards and conducted speed dating with stakeholders.
- Designed wireframes, visual interfaces and interaction.
- Tested system with 5 high school stakeholders, analyzed data and iterated design.

Academic Writing Assistance for Non-Native English Speaker Oct 2017-Sept 2018

Advisor: Dr. Chun Yu, Department of Computer Science and Technology, THU

Special Award of 36th Challenge Cup, Tsinghua University.

- Improved user experience by designing and developing esoda.org, by an online platform for
- academic English writing assistance with 3000+ average daily visits.
- Redesigned with learning principles for its further development and better learning outcome

A Machine Learning-Based KES for Interaction Design Sept 2017-June 2018

Advisor: Dr. Patrick Rau, Department of Industrial Engineering, THU

- Trained neural net models for Kansei classification by transfer learning from BVLC with Matlab, accuracy=84.7%.
- Conducted neuron analysis to analyze the rules of kawaii perception for Japanese females and found that Chinese females and Japanese females perceived kawaii differently.
- Built an auxiliary system for cross-cultural product design then designed and conducted validation experiments.

Sensing Curiosity in Play and Responding Jun-Oct 2017

Advisor: Dr. Justine Cassell, Human-Computer Interaction Institute, CMU

- Created a 17-iteration UI in Java for the Wizard-of-Oz study then conducted the heuristic evaluation and summative usability testing.
- Compiled more than 7000 logs of data from previous gameplay and extracted the typical features of children's game behaviors and strategies in order to build the children's curiosity behavior model.

Exploratory Research: Overuse and Abstinence of Social Media Apr-Sept 2017

Advisor: Dr. Patrick Rau, Department of Industrial Engineering, THU

- Conducted literature research on social media overuse, abstinence, and impact.
- Designed and conducted a 3-week social media abstinence experiment with 33 participants.
- Analyzed qualitative and quantitative data from 490 logs of diary study, interviews, and subjective scales, then demonstrated the effectiveness of short-term abstinence to improve productivity, life satisfaction and autonomy, especially for social media addicts.

Research Mentoring

Yinyin Wen Sept 2020-Present

Undergraduate student at Department of Psychology, University of California, Los Angeles (UCLA)

Kaixin Li Aug 2020-Present

Undergraduate student at Digital Media Studies, Brain & Cognitive Sciences, University of Rochester

Abdul Moid Munawar Mar 2020-Present

Undergraduate student at Department of Computer Science, University of Rochester

Sufian Mushtaq Jan 2020-Present

Undergraduate student at Department of Computer Science, University of Rochester

Saad Ahmad Jan 2020-Present

Undergraduate student at Department of Computer Science, University of Rochester