

Kaiwen Sun

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Research interests

My research centers around technology use in families. I examine children and parents' perceptions and behaviors around digital privacy and safety in the context of smart home technologies. Accordingly, I aim to create child-centered smart home controls to make digital privacy and safety for children a default and transparent part of smart home experiences, so families are empowered to take active control in their smart homes.

Keywords: children's digital privacy and safety; smart home technologies; HCI

Education

- 2019 – Present **University of Michigan** | Ann Arbor, MI
Ph.D. in Information
Advisors: Florian Schaub, Chris Brooks
- 2016 – 2018 **University of Michigan** | Ann Arbor, MI
M.S. in Information - Human Computer Interaction
- 2011 – 2013 **University of Minnesota** | Minneapolis, MN
B.S. in Marketing

Affiliations

- 2021 – Present **Center for Ethics, Society, and Computing (ESC)** | Ann Arbor, MI
ESC Researcher

Honors & Awards

- 2024 **CHI Best Paper Honorable Mention**
For *"I want it to talk like Darth Vader": Helping Children Construct Creative Self-Efficacy with Generative AI.*
- 2022 – 2024 **2022 Meta PhD Research Fellowship**
Meta
Meta awards PhD candidates conducting cutting-edge research in emerging topics across computer science and engineering. I am one of the 37 recipients selected from 2,300 applications worldwide.
- 2018 **SOUPS Student Grant**
Symposium on Usable Privacy and Security Baltimore, MD, USA.
- 2016 – 2018 **Merit Scholarship**
University of Michigan School of Information.

Publications

Journal Articles (4)

- 2024 **Unfulfilled Promises of Child Safety and Privacy: Portrayals and Use of Children in Smart Home Marketing**
Kaiwen Sun, Jingjie Li, Yixin Zou, Jenny Radesky, Christopher Brooks, Florian Schaub
Proceedings of the ACM on Human-Computer Interaction, 8(CSCW1).
<https://doi.org/10.1145/3637422>
Also to present at the Commission Nationale de l'Informatique et des Libertés (CNIL) Privacy Research Day 2024 in Paris
- 2023 **Cross-Contextual Examination of Older Adults' Privacy Concerns, Behaviors, and Vulnerabilities**
Yixin Zou, Kaiwen Sun, Tanisha Afnan, Ruba Abu-Salma, Robin Brewer, Florian Schaub
To appear in Proceedings on Privacy Enhancing Technologies (PoPETs). 2024.
- 2021 **Child Safety in the Smart Home: Parents' Perceptions, Needs, and Mitigation Strategies**
Kaiwen Sun, Yixin Zou, Jenny Radesky, Christopher Brooks, Florian Schaub
Proceedings of the ACM on Human-Computer Interaction, 5(CSCW2), 471:1–471:41.
<https://doi.org/10.1145/3479858>
Also presented at FTC PrivacyCon 2022
- 2021 **Disparities in Students' Propensity to Consent to Learning Analytics**
Warren Li, Kaiwen Sun, Florian Schaub, Chris Brooks.
The International Journal of Artificial Intelligence in Education Special Issue, June 2021.
<https://doi.org/10.1007/s40593-021-00254-2>

Peer-reviewed Conference Proceedings (10)

- 2024 **"Why is Everything in the Cloud?": Co-Designing Visual Cues Representing Data Processes with Children**
Kaiwen Sun, Ritesh Kanchi, Frances Marie Tabio Ello, Li-Neishin Co, Mandy Wu, Susan Gelman, Jenny Radesky, Florian Schaub, Jason Yip.
In ACM Interaction Design and Children (IDC 2024), June 2024
- 2024 **Making a metaphor sandwich: Analyzing children's use of metaphor during tabletop telepresence robot supported participatory design**
Casey Lee Hunt, Kaiwen Sun, Kaitlyn Tseng, Priyanka Balasubramaniam, Allison Druin, Amanda Huynh, Daniel Leithinger, Jason Yip.
In ACM Interaction Design and Children (IDC 2024), June 2024

- 2024 **“I want it to talk like Darth Vader”: Helping Children Construct Creative Self-Efficacy with Generative AI** 
 Michele Newman, [Kaiwen Sun](#), Ilena B Dalla Gasperina, Grace Y. Shin, Matthew Pedraja, Matthew Kyle Pedraja, Ritesh Kanchi, Maia B. Song, Rannie Li, Jin Ha Lee, Jason Yip.
CHI'24: ACM Conference on Human Factors in Computing Systems, May 2024
CHI Best Paper Honorable Mention Award.
- 2024 **Methods for Family-Centered Design: Bridging the Gap between Research and Practice**
 Bengisu Cagiltay, Hui-Ru Ho, [Kaiwen Sun](#), Zhaoyuan Su, Yuxing Wu, Olivia K. Richards, Qiao Jin, Junnan Yu, Jerry Fails, Jason Yip, Jodi Forlizzi.
CHI'24: ACM Conference on Human Factors in Computing Systems Extended Abstracts, May 2024
- 2023 **Designing together, miles apart: A longitudinal tabletop telepresence adventure in online co-design with children.**
 Casey Lee Hunt, [Kaiwen Sun](#), Fumi Tsukiyama, Iva Matkovic, Zachary Schwemler, Anastasia Wolf, Zihao Zhang, Allison Druin, Amanda Huynh, Daniel Leithinger, Jason Yip
In ACM Interaction Design and Children (IDC 2023).
<https://doi.org/10.1145/3585088.3589359>
- 2023 **Child-Centred AI Design: Definition, Operation, and Considerations**
 Ge Wang, [Kaiwen Sun](#), Ayça Atabey, Kruakae Pothong, Grace C Lin, Jun Zhao, Jason C Yip.
CHI'23: ACM Conference on Human Factors in Computing Systems Extended Abstracts, April 2023
- 2023 **“It’s up to the Consumer to be Smart”: Understanding the Security and Privacy Attitudes of Smart Home Users on Reddit**
 Jingjie Li, [Kaiwen Sun](#), Brittany Huff, Anna Bierley, Younghyun Kim, Florian Schaub, Kassem Fawaz.
IEEE Symposium on Security and Privacy, May 2023
- 2021 **“They See You’re a Girl if You Pick a Pink Robot with a Skirt”: A Qualitative Study of How Children Conceptualize Data Processing and Digital Privacy Risks**
[Kaiwen Sun](#), Carlo Sugatan, Tanisha Afnan, Hailey Simon, Susan A Gelman, Jenny Radesky, Florian Schaub.
CHI'21: Conference on Human Factors in Computing Systems, ACM, May 2021.(Acceptance rate: 26.3%)
<https://doi.org/10.1145/3411764.3445333>
- 2019 **It’s My Data! Tensions Among Stakeholders of a Learning Analytics Dashboard**
[Kaiwen Sun](#), Abraham Mhaidli, Sonakshi Watel, Chris Brooks, Florian Schaub
CHI'19: Conference on Human Factors in Computing Systems, ACM, May 2019. (Acceptance rate: 23.8%)
<https://doi.org/10.1145/3290605.3300824>

- 2019 **You ‘Might’ Be Affected: An Empirical Analysis of Usability Issues in Data Breach Notifications**
 Yixin Zou, Shawn Danino, Kaiwen Sun, Florian Schaub
CHI’19: Conference on Human Factors in Computing Systems, ACM, May 2019. (Acceptance rate: 23.8%)
<https://doi.org/10.1145/3290605.3300424>
- Workshop Proceedings and Posters (4)
- 2022 **The Portrayal of Children in Smart Home Marketing**
Kaiwen Sun, Jingjie Li, Yixin Zou, Chris Brooks, Florian Schaub
Kids’ Online Privacy and Safety (KOPS), Co-located with *SOUPS* Aug 2022.
- 2020 **It’s Everyone’s Home: Designing Smart Home Technologies with Children in Mind**
Kaiwen Sun, Chris Brooks, Florian Schaub
CHI ’20 Workshop on Networked Privacy. Apr 2020.
- 2018 **Taking Student Data for Granted? A Multi-Stakeholder Analysis of a Learning Analytics System**
Kaiwen Sun, Abraham Mhaidli, Sonakshi Watel, Chris Brooks, Florian Schaub
EDM’18 Workshop on Policy and Educational Data Mining: Norms, Risks and Safeguards. July 2018.
- 2018 **Taking Student Data for Granted? A Multi-Stakeholder Analysis of a Learning Analytics System**
Kaiwen Sun, Abraham Mhaidli, Sonakshi Watel, Chris Brooks, Florian Schaub
 Poster. *SOUPS’18: Symposium on Usable Privacy and Security*. USENIX, Aug 2018.

Teaching Experience

Graduate Student Instructor

- Winter 2022 **SIADS 523: Communicating Data Science Results (University of Michigan)**
 Oversee projects led by online data science program students and grade assignments.
- Winter 2022 **SIADS 601: Qualitative Inquiry for Data Scientists (University of Michigan)**
 Oversee projects led by online data science program students and grade assignments.
- Fall 2021 **SI 582: Introduction to Interaction Design (University of Michigan)**
 led weekly in-class discussion sections, oversaw 45 projects led by master students, held office hours, and graded assignments.
- Winter 2021 **SI 658: Information Architecture (University of Michigan)**
 Facilitated weekly lecture, provided feedback to 96 individual presentations delivered by master students, and held office hours.

5.0 (of 5.0) median rating (16 of 33 students).

Guest Lectures

March 2024 **INFR11158/11230: Usable Security and Privacy | University of Edinburgh**
“Understanding and Supporting Children in the Digital World” (1 lecture)

Invited External Talks

- 2023 **Child Safety in the Smart Home**
University of Michigan, Privacy Day (Feb 8)
- 2022 **Child Safety in the Smart Home: Parents’ Perceptions, Needs, and Mitigation Strategies**
The US Federal Trade Commission, PrivacyCon (Nov 1st)

Employment

- 2017 – Present **Graduate Student Research Assistant**
University of Michigan | Ann Arbor, MI
- Older adults’ privacy and security perceptions and experiences around different types of digital contexts.
 - The depiction of children’s experiences in smart home marketing.
 - The impact of privacy and security topics and discussions on consumers’ adoptions of smart home technologies from Reddit.
 - Parents’ perceptions and mitigation strategies of children’s smart home safety.
 - Children’s perceptions of data processing and digital privacy risks.
 - Measurement of students’ privacy expectations and sentiments toward the use of student data in learning analytics.
 - Disparities in students’ propensity to consent to learning analytics.
 - A multi-stakeholder perspective of privacy in learning analytics.
 - Empirical analysis of usability issues in data breach notifications.
- 2017 **User Experience Intern**
Kohler. Co, Emerging Technology Design Studio | Kohler, WI
- Contributed iterative concept development through exploratory UX research methods, mindmap, digital illustration, presentations, for use-case scenarios in bathroom and between connected IoT products.
 - Created new product interface information architecture and interactions through ideation, design research and wireframes while collaborating with two business units.
- 2017 **UX Consultant**
Harman | Novi, MI
- Designed a survey to uncover users’ attitudes, behaviors and characteristics, analyzed survey responses to improve infotainment system user experiences.
 - Conducted usability tests to provide insights for client’s design update.

Services

External Reviewer

- Information, Communication and Society
- International Journal of Human - Computer Studies
- New Media & Society Journal
- ACM International Journal of Child-Computer Interaction
- ACM Conference On Computer-Supported Cooperative Work And Social Computing (CSCW 2023)
- ACM Conference on Interaction Design and Children (IDC 2024)
- ACM Conference on Human Factors in Computing Systems (CHI 2024)

Mentor, UROP (Undergraduate Research Opportunity Program)

Serve as research mentor for four undergraduate students on two research projects. Guide students to learn about research process and practice research skills.