



From Child-Centered to Family-Centered Interaction Design

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ABSTRACT

The goal of this workshop is to have interdisciplinary discussions on family-centered interaction design of technology as an extension to child-centered design. The workshop will discuss the potential benefits of a family-centered approach to design, as well as the challenges and open questions that designers may face when adopting this approach. Through discussions and interactive activities, participants will have the opportunity to discuss and share ideas on how to effectively incorporate a family-centered perspective into their own design processes. A family-centered approach to design has the potential to create more meaningful and contextual experiences for children and their families.

CCS CONCEPTS

• **Human-centered computing** → **Interaction design**; *User centered design*.

KEYWORDS

child-computer interaction, family-centered design

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1 BACKGROUND

In recent years, there has been increasing advancements in the field of interaction design for children in the design of new technology. However, this often focuses on children, and less attention is paid to the broader family context. Families are an integral part of the development of any child, and while children may be the primary users of technology, family members such as parents, siblings, and relatives might play a role in the child's interaction. Thus, it is important to consider family members and dynamics to understand

factors that will contribute to the child's interaction with technology. Family-centered interaction design could offer many insights, such as understanding conflicting goals and perspectives of family members, facilitating communication between family members, building stronger family bonds, or long-term engagement [2–4]. Prior workshops have explored designing technology for families [1, 5], however these workshops occurred more than ten years ago and there is limited IDC workshops over the past decade that capture this topic. In sum, the design of technology for children and families still remains a largely uncharted field, with vast potential to leverage broader family dynamics to understand and improve the experience of technology in the home.

In this half-day workshop, **we will explore the benefits, challenges, and open questions for moving towards a more family-centered approach to interaction design for children**. The main goal of the workshop is to provide a forum for researchers and practitioners to share their work and experiences in the field of family-centered design, to facilitate discussions and exchange of ideas, and to identify potential areas for future research and collaboration. Through these activities, participants will gain a better understanding of the benefits, challenges, and open questions for a family-centered design and how it can be effectively implemented in their own work.

2 ORGANIZERS

Bengisu Cagiltay (Main Contact) is a third year PhD student in the University of Wisconsin-Madison Computer Sciences program with a Ph.D. minor in Human Development and Family Studies. She received her Masters degree in Cognitive Science, and B.S. degree in Computer Science. Her Ph.D. research focuses on designing social companion robots for children and families to support children's social and intellectual learning, and to facilitate connection making between family members. Her prior work received paper awards in ACM CHI and IDC conferences.

Rabia Ibtasar is a fourth year PhD student in the University of Illinois-Chicago Learning Sciences program. She received her Masters in Computer Science from the University of Pennsylvania and a BSc. degree in Computer Science from Lahore University of Management Sciences. Her PhD research focuses on improving the experiences of women in Computer Science learning environments and fostering a sense of belonging for young learners in the field.

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She recently designed a Social Robotics camp for Middle School students to build student interest in robotics, human-computer interaction and Computer Science.

Joseph E Michaelis is an Assistant Professor of Learning Sciences, and of Computer Science at the University of Illinois Chicago (UIC). Joe's research sits at the nexus of learning sciences and human-computer interaction disciplines. His research focuses on technologies designed for social connection-making with learners to support learning and interest through long-term engagement, in ways that seamlessly integrate into existing educational activities in classrooms, informal learning environments, and at home. The goal of these child-robot interactions is to build social connections, provide comprehension support, and promote interest in reading and STEM learning.

Sarah Sebo is an Assistant Professor of Computer Science at the University of Chicago. Sarah's work focuses on human-robot interaction (HRI), with a particular focus on exploring social dynamics in human-robot interactions. She has experience working with children in the context of robot-child tutoring and robot facilitation of child collaborative learning. She has organized the 2017 HRI Pioneers workshop and has served on the HRI program committee for the past three years.

Bilge Mutlu is a Sheldon B. and Marianne S. Lubar Professor of Computer Science, Psychology, and Industrial Engineering at the University of Wisconsin–Madison and the director of the People and Robots Laboratory. Bilge received his PhD degree from Carnegie Mellon University's Human-Computer Interaction Institute in 2009. Bilge is the chief editor of the HRI section of the journal *Frontiers in Robotics & AI* and an associated editor of *Human-Computer Interaction and Foundations and Trends® in Human-Computer Interaction*. Bilge's research in human-robot interaction (HRI) builds human-centered principles and methods to enable effective and intuitive interactions between people and robotic technologies and facilitate the successful integration of these technologies into human environments.

3 PRE-WORKSHOP PLANS

We will invite researchers, designers, and practitioners who are interested in *family centered interaction design for children* to participate in our workshop. We will use mailing lists (CHI-kids mailing list), social media (e.g., Twitter, Facebook groups on CCI research, LinkedIn), and conferences (e.g., CHI, HRI) to reach out to potential participants and share information and updates about the workshop, including its focus, goals, and format. We will distribute calls for *position papers* and *work-in-progress* reports (2-4 pages) and use an online submission system to collect and review submissions of interested individuals, and provide feedback and guidance to the authors. We will call for papers in the following topics: (1) position papers discussing research questions, opportunities, benefits, or challenges in applying family-centered design, (2) work-in-progress reports highlighting current research on family-centered design. To promote broader participation, we will state that participation in this workshop does not require the submission of a paper however participants are encouraged to submit a brief statement describing their interest and motivation in joining the workshop. We will also provide support for remote participants via hybrid participation

on Zoom, to ensure that everyone can participate in the workshop and contribute to the discussions. By using these strategies and channels, we hope to recruit a diverse and engaged community of participants for the workshop, and foster collaboration and knowledge sharing among the members.

3.0.1 Website. We plan to host our website on Notion, an accessible and user friendly website: <https://bit.ly/idc23fcid> The website will contain information including the call for participation, workshop goals and details, a tentative program, contact information of the organizers, a submission page and relevant deadlines.

4 WORKSHOP STRUCTURE

This half-day workshop will facilitate an open space for discussing issues related to family-centered interaction design for children, through a combination of invited speakers, lightning talks, and interactive discussion activities. Remote and in-person participants will be able to engage in these group discussions synchronously. The structure is as follows:

- (1) **Introduction and workshop overview (10 minutes):** The workshop facilitator will introduce the topic of family-centered interaction design and provide an overview of the workshop objectives, schedule, and activities.
- (2) **Keynote Talk and Q&A (35 minutes):** (*Accepted Speaker: Dr. Jerry Alan Fails*) The keynote speaker will give a talk reflecting on the past decade of designing technology for families.
- (3) **Lightning Talks (45 minutes):** 5-minute lightning talks up to 8 participants. Participants will give lightning talks of their position papers or work-in-progress related to benefits, challenges, and open questions for family-centered interaction design for children.
– *Coffee Break (10 minutes)*
- (4) **Invited Speaker From Family Studies (30 minutes):** (*Accepted Speaker: Dr. Heather Kirkorian*) The talk will capture a family studies perspective to designing media and technology for children and their families.
- (5) **Open questions and future directions for family-centered interaction design research (30 minutes):** Through an interactive activity, participants will discuss and brainstorm current gaps and open questions in the field of family-centered interaction design, and discuss potential future directions for research in their area.
- (6) **Workshop wrap-up and discussion (20 minutes):** The facilitator will lead a group discussion to review the key points covered in the workshop, and facilitate a discussion on opportunities for further exploration and collaboration in the field of family-centered interaction design.

5 POST-WORKSHOP PLANS

To ensure that the workshop has a lasting impact and tangible outcomes, we plan to follow up on the discussions and activities with several post-workshop activities. These will include:

Lightning Talks: Participants who have submitted *position papers* or *work-in-progress* reports for the workshop will be invited to present their papers during a dedicated lightning talk session. The

paper presentation will provide an opportunity for the participants to share their work and perspective with other attendees.

Workshop report: We will compile a workshop report that summarizes the discussions, presentations, and activities of the workshop. The report will include a summary of the key points, insights, and findings from the workshop, as well as a list of the participants and their contributions. The report will be made available to the participants and other interested individuals, and will provide a record of the workshop and its outcomes.

Journal Special Issue: We plan to organize a *Frontiers* “Research Topic” (i.e., a special issue). The proposed research topics will be cross listed across *Frontiers in Robotics & AI* and *Frontiers in Human-Media Interaction* depending on the distribution of topics. Through this special issue, participants, other researchers, and practitioners can submit their full papers based on the topics and issues discussed in the workshop. The special issue will provide a platform for publishing high-quality research and practices in the field of family-centered interaction design, and will serve as a reference for future research and development in this area. By following up on the workshop with these activities, we hope to create tangible outcomes that will benefit the participants and the wider community, and promote the continued development and advancement of family-centered design.

6 CALL FOR PARTICIPATION

Families are an integral part of the development of any child, and understanding their dynamics can be a powerful tool in creating effective and positive interactions between technology and children. This half-day workshop will provide a forum for researchers, designers, and practitioners to discuss the potential benefits, challenges, and open questions for family-centered interaction design as an extension to a child-centered approach. Through talks from family-centered researchers and group discussions, participants will have the opportunity to share their own experiences and insights on this topic. No prior experience with family-centered design is required.

We welcome paper submissions (2-4 pages) of *position papers* or *work-in-progress reports* for a lightning talk, related to the following topics (1) position papers discussing research questions, opportunities, benefits, or challenges in applying family-centered design, (2) work-in-progress reports highlighting current research on family-centered design. Accepted papers will be invited to present their submission in a dedicated lightning talk session. The selection will be based on the relevance and quality of the papers submitted. Papers should be submitted in PDF format through the online submission system. At least one author of each accepted paper must register and attend the workshop and main conference. Participation in this workshop does not require the submission of a paper however participants are encouraged to submit a brief statement describing their interest and motivation in joining the workshop. We look forward to receiving your submissions and engaging in lively discussions at the workshop!

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