Towards Integrating XR Technologies into Family Settings

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Abstract

In this position statement, I present my ongoing thesis research that explores how extended reality (XR) technologies can be meaningfully integrated into family settings, specifically for parents and children ages 6-11. Through this work, I aim to identify actionable insights for designing XR experiences that align with the needs and priorities of families while mitigating potential risks. I hope to contribute early insights from my research to the workshop, seek feedback on my methodologies, and engage in rich discussions about ethical, child-centered XR design and the associated research challenges.

CCS Concepts

• **Human-centered computing** → **Virtual reality**; • **Social and professional topics** → **Children**;

Keywords

Extended Reality, Children, Family, Participatory Design

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1 Introduction

Technology is evolving and becoming more accessible and affordable, significantly transforming family life. It is no longer merely a convenience; it has become integral to how we interact both within our homes and with the outside world. As technology continues to shape experiences within families, the rising popularity of Extended Reality (XR)–which encompasses Virtual Reality (VR) and Augmented Reality (AR)–raises some concerns about its impact on children and families.

XR holds exciting potential for family settings. It can facilitate shared experiences that bring families closer together, such as collaborative games or learning activities. However, there are also ethical concerns associated with XR; it may lead to increased social isolation and disconnection, as it may seclude family members even when they are physically present with one another. This dual nature of XR–as a tool for both bonding and separation–underscores the importance of carefully designing experiences that support family dynamics instead of introducing issues [3].

Despite this potential, research on XR's effects on family dynamics and specific design features that can promote family connection remains limited. Most XR applications often focus on individual experiences or general entertainment, often neglecting the unique needs of families. Although some studies have explored the cognitive and psychological impacts of XR on individuals, there is a notable lack of research exploring its effects on group or family dynamics [2].

As XR technology becomes more commonplace in households, families are beginning to experiment with its applications for learning, play, and connection. While the adoption of XR is growing, there are many uncertainties regarding this technology, particularly with families. Like the integration of other technologies, XR technologies may bring both positive benefits and negative outcomes on families. Therefore, it is essential to understand these implications and to create XR applications that effectively meet the needs of families, enhancing their connections and experiences together.

My research focuses to address these gaps by investigating how XR can be integrated into family settings in a way that aligns with the needs and preferences of families. By understanding and bringing in family perspectives, I aim to identify actionable insights for designing XR experiences that promote connection within families while mitigating potential risks. This can offer guidance for creating inclusive, family-centered XR experiences in the home.

Figure 1: A co-design session with a child participant focused on designing XR experience

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2 Position Statement

In my ongoing thesis research, I am investigating how XR technologies can be meaningfully integrated into family settings, specifically for parents and children aged 6–11. To explore this, I am employing two main approaches: a one-week diary study with parent-child dyads at Boise, which explores how families envision using XR in their everyday lives, including their hopes, concerns, and values. Additionally, I am conducting participatory co-design sessions with children ages 6-11, which center their voices to inform potential features and design ideas for family-oriented XR experiences [1].

My research aligns closely with the goals of this workshop, which seeks to explore the implications of XR technologies for children. My work contributes to this discussion by exploring the risks and opportunities of XR in a family context and how XR can be designed in ways that reflect the lived experiences, needs, and priorities of families. At this workshop, I can share early findings regarding the perspectives of families on integrating XR technologies in their lives from my diary study, as well as design insights from co-design sessions with children. I believe these insights can spark meaningful discussions around ethical XR design.

The workshop provides a valuable space to present my ongoing research, learn from fellow researchers who are grappling with similar questions, and receive feedback on my study design and preliminary findings. I am particularly interested in discussing data collection and analysis strategies, and future directions for my work, research design challenges, and the ethical dilemmas that arise when designing for children. I hope to connect with fellow researchers, engage in conversations that will help strengthen this area of research and be part of a collaborative community working on related challenges.

By participating in this workshop, I look forward to exchanging ideas, refining my approach and contributing to a growing community committed to ensuring XR technologies are developed responsibly, ethically, and in ways that support children.

3 Acknowledgments

<To be added based on acceptance and approval from funder.>

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