

## **XRmas: Virtual Augmented Experience for Remote Family Meetings during Christmas**

VIDEO ABSTRACT FOR WORKSHOP AT ACM CHI 2021: “Social VR: A New Medium for Remote Communication and Collaboration.” <https://www.socialvr-ws.com/>

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XRmas allows a remote (VR) user to visit a local (HoloLens and/or mobile AR) user’s living room and interact in a virtual augmented space together in a Christmas context. The goal is to enable the remote user to feel not only as if they are in the space, but also that they ‘belong’ there. XRmas achieves this through two steps: (1) giving the remote user the sense of ‘being there’ through immersive VR and a full-body avatar embodiment; and (2) giving them the sense of ‘belonging there’ through providing them the ability to interact with shared virtual objects as well as physical objects in the real environment. In XRmas, the remote user can spawn virtual gift boxes that the local user can open, decorate the room with virtual ornaments, and light up the physical Christmas tree in the local user’s living room. The inspiration for this system was to allow the first two authors’ distant family members to visit them in their home virtually during the COVID-19 pandemic. As they could not travel, they wanted to bring their distant loved ones into their home virtually, and beyond that, make their home ‘belong’ to them, as it should to any family member coming home for the holidays. We use XRmas as an illustration to argue that XR telepresence systems should strive toward the goal of making the remote user ‘belong’ to the space—that is, making the space theirs, and making the space accessible to them, just as it is to local users.

**Additional Keywords and Phrases:** telepresence, mixed reality, augmented reality, virtual reality, belonging, remote embodiment, avatar, social computing

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**VIDEO LINK**

Video demonstration of XRmas: <https://youtu.be/vsGzLRctESA>



Figure 1: The XRmas telepresence system, AR view in the local environment. The left photo shows the local user sitting on the sofa and interacting with the remote user's avatar. The right photo shows the local user's first-person view (through a Microsoft HoloLens AR headset) of the remote user's avatar.



Figure 2: The XRmas telepresence system, VR side. The left photo shows the remote user wearing a VR headset in their environment. The centre and right photos show the remote user's view (through an Oculus Quest VR headset) into the local user's environment.