

Thesis Abstract

No. _____

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Thesis Title Recreating Emotional Experiences in VR			
Thesis Summary With the advancement of technology, people have developed more methods to record, preserve, and reproduce a collective experience. Beyond reconstructing physical aspects of real-world interactions, such as expressions, sounds, and gestures, HCI researchers are exploring ways to incorporate deeper layers of information that reflect internal emotions in the process of data transmission. However, in “re-enactment” projects, there is a challenge in reconciling the feelings of the sharers in the real world with those of the receivers in the virtual world. Due to the separation of crowds, time, and location, it is difficult to evaluate this continuous process of sharing and enhancing experience. There is currently a lack of methods to measure such continuous emotional resonance. This research explored the application of physiological data in both re-enactment and measurement, demonstrating how to evoke similar emotional experiences in re-enactment scenarios and assessing the effectiveness of recreations through physiological synchrony in these scenarios. In this process, physiological data serves both as the cornerstone of design and as a metric for measurement. This thesis demonstrates that fully abstract visualizations effectively enhance physiological synchrony between live audiences and VR participants, highlighting the potential of data visualization in recreating immersive social experiences. Notably, it also uncovers a placebo effect, where informed participants, even when presented with fake data, displayed heightened engagement, co-presence, and positive emotional responses. Furthermore, a novel dataset combining environmental and physiological data recorded from live and laboratory events is provided, laying the groundwork for innovative methods to record, recreate, and evaluate social experiences in VR.			