The Immersive Archive

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Abstract

Virtual and Augmented Reality (XR) are rapidly expanding mediums, but few realize that they have a very long history of development emerging out of early prototypes by research labs, artists, and inventors. These early decades of XR development have not yet been comprehensively archived and exhibited. In some instances, it is possible to access research papers and other documentation about these projects which can give a general sense of their functions. But what if we could actually visit those early labs virtually, learn more about these pioneering efforts, and experience what these prototypes were really like? This project is focused on developing prototypes for an Immersive Archive that restores and exhibits seminal XR devices and visions from immersive media history. Similar in concept and function to a Film Archive or Internet Archive that collect, restore, and conserve a wide range of media, the objective here is to provide users an interactive, first person, immersive experience of the VR and AR mediums throughout their evolution, with links to a rich context of historical background and archival materials for deeper exploration.

https://immersivearchive.org/

Keywords

Media, Archiving, Media Archeology, Memory, Immersive Media, Virtual realities, XR

Objective:

This project is focused on developing prototypes for an Immersive Archive that restores and exhibits seminal XR devices and visions from immersive media history. Similar in concept and function to a Film Archive or Internet Archive that collect, restore, and conserve a wide range of media, the objective here is to provide users an interactive, first person, immersive experience of the VR and AR mediums throughout their evolution, with links to a rich context of historical background and archival materials for deeper exploration.

We recognize that in order to establish best practices for immersive media preservation and support future study, there needs to be a collaboration between artists, institutions, and industry. As the field enters the next chapters of XR development, we hope this initiative will build knowledge and engagement around the preservation of immersive media experiences. We also hope to spark discourse around how these histories are documented, to ensure these narratives are shaped by a wide and representative community covering the breadth of immersive media efforts. Early prototypes of this archival initiative invite discussion on these questions.

Approach:

The first phase of this project has focused on the development of proof-of-concept simulations of the first efforts to develop XR technologies. These immersive experiences include:

● The Sensorama device developed in the late 1950s by Mort Heilig, which provided a multisensory, immersive cinema experience.

● The head-mounted display project led by Ivan Sutherland in the late 1960s, which prototyped many of the computational and display technologies still used in contemporary VR and AR media.

The simulations of these projects are developed in a Unity-based 3D computer graphics environment and displayed in contemporary VR devices such as the HTC Vive and Meta Quest. The 3D assets used in the simulations, such as Sutherland's HMD and the Sensorama device, are captured with high-resolution photogrammetric scanning technologies and imported into the Unity environment. Current prototypes of these experiences allow users to enter or put on virtual models of the early devices, see the original content that was developed, and interact with device components. Next steps include guided descriptions of the devices, annotations of the technology components, and the addition of further landmark XR projects.

The Immersive Archive Team:

The development team for this project consists of faculty, staff, and students from the School of Cinematic Arts (SCA) along with other schools on campus. The team is working in

collaboration with SCA's HMH Foundation Moving Image
Archive, The Computer History Museum.