# SatHands

Proposal for a VR Media Arts Installation

This proposal is for a Virtual Reality and physical installation that also functions in the "Metaverse" as an immersive, interactive, multiuser art work. The piece uses video game engines and multi-user gaming platforms to connect the "players" across a network. In this way a user/viewer/participant may log into the virtual space with a VR headset and the network address of the artwork from any place in the world or from the room next door. In order for other viewers to at least see what the person with the headset is seeing a projector will show the live streamed video from the viewers headset. This is called "quest casting" and can be done if the projector and the headset are on the same internal network.The piece uses an external multi-user server that hosts a "room" where participant can join in the virtual space as pictured in the stills below.
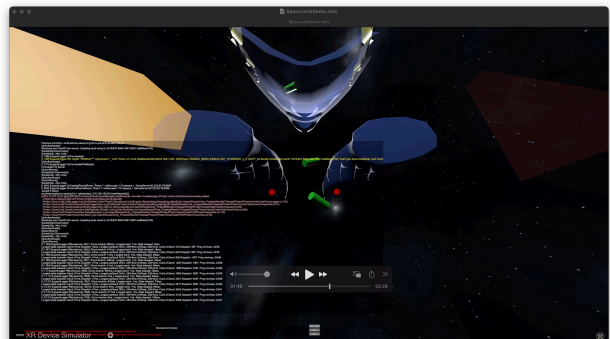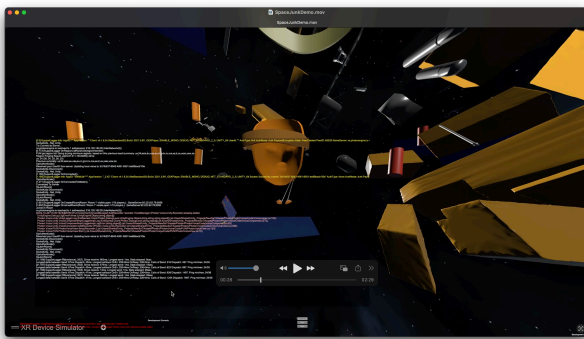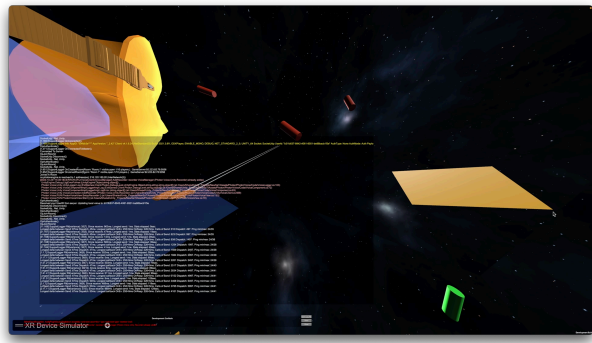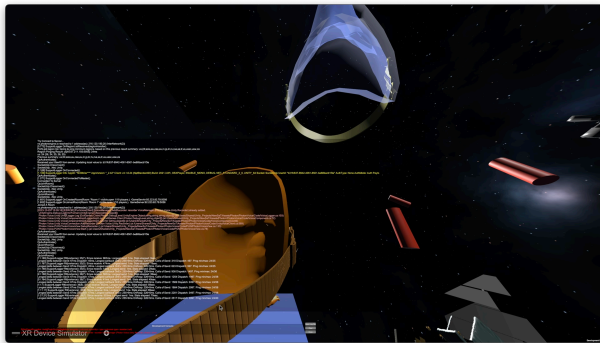
The masks pictured represent the Avatars for two different people. The "player/

users" also have virtual hands that can grab the pieces of space junk floating around. The Avatars can speak to each other and engage in audio conversation. There are different colored "platforms" and cylinders that function as markers to teleport onto. In effect one can transport oneself to various points within the virtual space to get a different view. A person can also physically walk around the space if the actual exhibition space is a gallery or an "arena play space". The Meta-Quest headset asks the user to draw the room boundaries before the "play" commences. This can be preprogrammed to allow for a simple gallery interface. The user can also rotate their view using the joystick on the hand controllers.   I had been experimenting with using hand tracking but the learning curve is difficult for a casual user. Hand controllers offer the user some physical interface that seems reasonable. There are a few sounds that correspond to a "click" when an object is grabbed or the viewer teleports. But the only other sound is the music of Rhys Chatham's "Crimson Grail". Chatham gave permission to use any of his music including his most recent work. The music is "spatialized" allowing one to sense ones position in space vis a vis the direction and proximity of the music. I have included a video that was exported from a demo app that can give
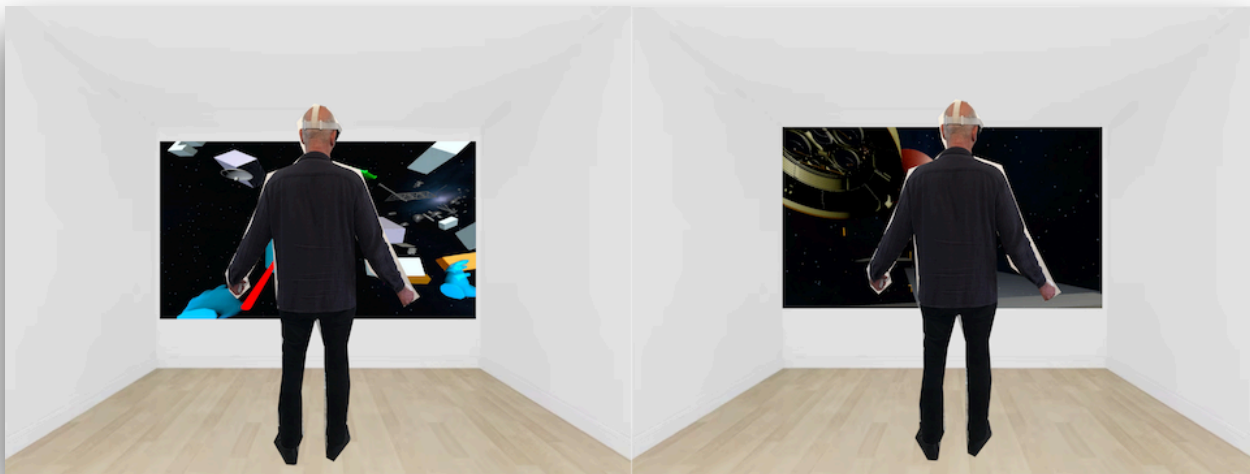
you some sense of what the visual space is like.

Background and Frame of Reference

In 1970 I went to the Ronald Feldman gallery in New York, and saw an installation piece by the artist Keith Sonnier. It was called NY/LA Hookup. It was composed of a microphone on a mic stand and two stereo speakers. The same set up was done in Ace Gallery in Los Angeles. You could hear people pacing around the gallery in L.A. and if you spoke into the microphone they would hear you. The people in the L.A. gallery would engage in a chat with the people in New York. This was accomplished because A.T. & T. hooked up an open phone connection "dedicated" line from New York to Los Angeles.

Many years later I was involved in the first internet art and artist's "web sites" with ArtNetWeb and The Thing. Both coming out of New York. I was also involved with Pseudo Online Network that was doing live video/audio streaming podcasts out of New York in 1997. Remo Campopiano, one of my colleagues from ArtNetWeb, was invited by MIT to do the first Internet web exhibition called "Port MIT" — https://listart.mit.edu/exhibitions/port-navigating-digital-culture-organized-r-t-n-e-t-w-e-b   At the time I was in Aix-En-Provence teaching an internet workshop. Along with Peter Sinclair and the students at the Ecole D'Art D'Aix-en-Provence we we are to stream live audio and video performance to a large rear projection screen in the gallery at the List Center for the Visual Arts during the opening at MIT. These works and early internet experiments come out of my involvement with 1970's art movements, Punk and later Hacker/Cyber-Punk.

Internal Structure, Software, and Development

As mentioned earlier, I work with Open Source Software and take a "Hacker/DIY" approach to my art. From the early beginnings of Internet art there was always a practice of adapting corporate tools but using them for the purposes of making art. There's a term in Situationist Philosophy called "Detournement" which more or less conveys the sense of what I and other "Cyber-Punks" use as a creative strategy. I've been developing the piece "SatHands" for 3 years now. I have a working prototype that needs institutional support to be fully realized.   The software I'm using is the Unity Gaming engine with Meta-Quest software plug-ins for VR. In the spirit of "detournement" I am using corporate tools to create VR multi-user games, I am not making games for mass distribution or pursuing a commercial first person shooter game. However, many of the tools used to create video/computer games, are used (subverted) for my artistic ends. SatHands and most of my works try to extend the understanding of VR beyond the scope of gaming. I also feel that digital 3D objects are interesting in and of themselves and are part of a new language. In this way 3D virtual objects can be used in the same manner as physical objects to create "Virtual Assemblage." Indeed for the past 9 years I have been working through these ideas first with Augmented Reality and continuing 3 years ago into Virtual Reality.

SatHands uses NASA 3D models that anyone can download from the NASA web site. I've downloaded several satellites and use them in my work. The immersive VR space is literally outer space. I theorized that once sculpture, architecture and other objects are free of gravity there is no need for such things as post and lintel construction or any reference to buildings with gravity in mind. This is theory, but by using VR there is a physical sensation of floating in outer space. The "player" has a set of virtual hands and various methods of moving. This is a primal condition of learning how to move around in zero gravity. I don't have any user instructions as is standard practice in video games. Interestingly enough some

people understand this intrinsically while others have difficulty with the immersive space.

Each Player has an Avatar something like a hockey mask. I had a notion of multi-users customizing their Avatar masks but haven't gotten that far with the programming. I did some earlier experiments using hand tracking to correspond with the virtual hands in the Virtual Space. I think however that the simplest intuitive interface are the controllers that come with the Quest 2 headsets. I will add that I am using basic headsets and not the most recent developments. I think this experience is so new that the simplest interface is the best.

As a multi-user piece people log into a shared virtual space and see the Avatar/Masks of other people. They can also speak to other people in the Virtual Space. This harkens back to the Keith Sonnier piece that used open telephone lines in this case called "VoIP" Voice Over Internet Protocol.

The satellites are not whole but have been exploded and are rotating/floating in the no gravity environment. The satellites are engineering models that have been "exploded" using a physics engine that is part of the Unity programming software. This is an example of "detournement" in the creation of digital art.   The title of the piece "SatHands" is compressed from Satellite Hands and of course has a bit of a pun/double entendre.

The piece is envisioned as a special project room with two VR headsets on

SatHandsDemo
(Click "watch on YouTube" to play video)
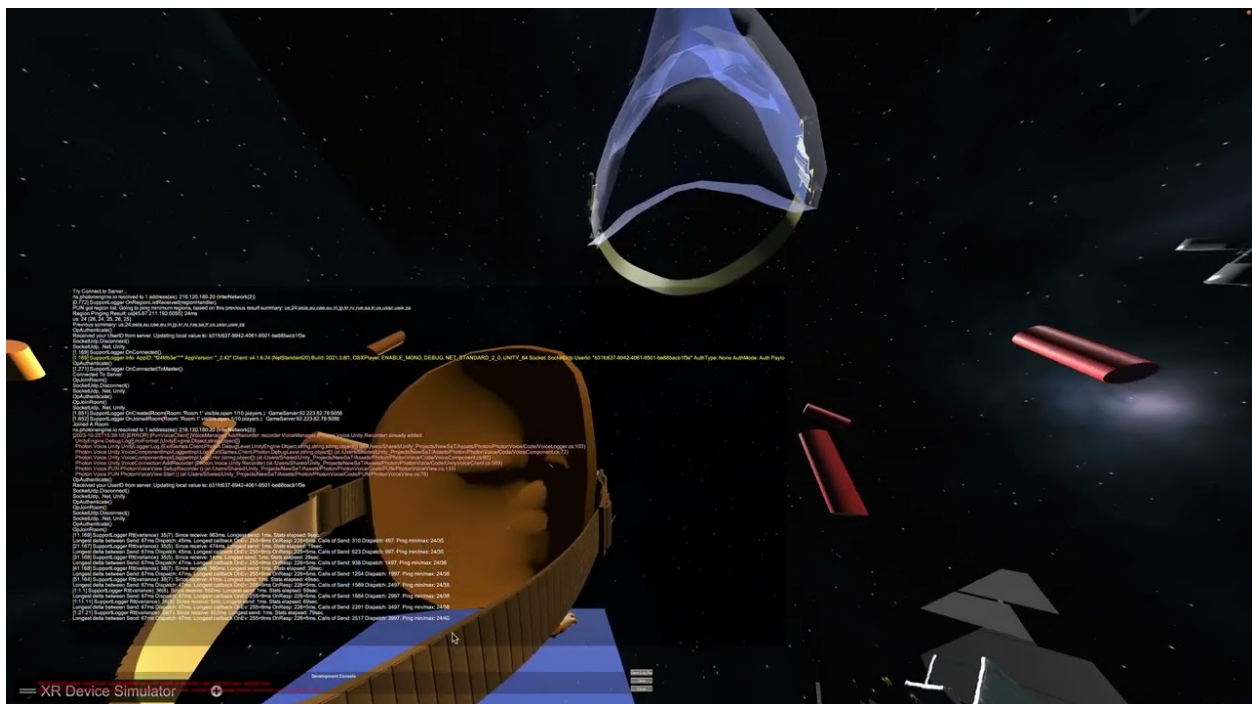
pedestals. There is also a video projection showing a live stream of the Immersive Environment I.E. outer space with exploded bits of satellites swirling around. There are platforms (simple geometric planes) floating that one can teleport to and there are also virtual hands and avatars masks. Rhys Chatham's music is playing in the background. Note: the music is spatialized in a way that a person can move closer to the music and also hear it in Quad sound. The hands allow the user to pick up (grab) bits of satellite with their virtual hands. User/viewer/players can also audio chat with each other and they can collaborate on building virtual sculptures with the bits of satellites.

Social Sculpture and Networked Art

This piece explores the social aspects that are also part of online gaming. Gamers tend to talk to each other via audio when they are engaged. In this case the users must first ascertain if there are other users in the virtual space. In a special project space this can be started with two people using the headsets. They will immediately be connected in both virtual space and real space. It would be good to have a docent/facilitator to help putting on and taking off the headsets. A facilitator could also explain the piece a bit and how to interface with it. I see this work as a multi-room, multi-museum piece. The actual physical space may be minimal (6 meters x 6 meters), with a projection on one wall and 4 channel speakers, one in each corner of the room. I have previewed this work to different people in my studio and the response has been positive.

In Conclusion

This is a preliminary proposal. I hope this will be of interest to curators in the New Media area.

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