CS428
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HW1

After trying out some of the different VR/AR platforms that were demoed in class, I can definitely see the different advantages that certain platforms bring to the table. Starting off with the cheapest/lower costing technology that was shown which would be the common smartphone AR. What makes this platform so advantageous is the accessibility and reachability in comparison to the other platforms. Everyone nowadays has a smartphone in their pocket, especially one that is capable of outputting 3D visuals. Because of this accessibility, AR apps on the smartphone can easily be created and posted to online app stores such as Google Play Store for Android whilst for IOS would be on the App Store. One example of this would be the popular Pokemon GO. Pokemon GO is an augmented reality free-to-play video game app that was made in 2016 by the software company Niantic. The app revolves around players walking around and collect creatures called Pokemon utilizing their phones by having such pokemon be augmented onto their phones. The game heavily utilizes location-based and AR technology in terms of its gameplay. Because of its accessibility, it reached out to over 147 monthly million users back in May of 2018. It's amazing to see how such an AR app was able to be accessed by so many only due to the fact it's on a phone.

Other AR apps such as smartphone-based 360 videos can be easily found on Youtube which was introduced back in 2015 on that platform. It allowed people that had smartphones with a built-in gyroscope to be immersed in a 360 video, allowing one to experience the video in more than one view. One of the advantages of this type of AR is that it allows users to experience a whole new world in the cusp of their hands rather than play around with augmented 3D models like most typical smartphone AR is.

The next type of AR/VR platform is the head-mounted display type of virtual reality. This includes headsets such as HTC Vive, Oculus Quest/Rift line of headsets, Windows Mixed Reality headsets, Valve Index, and including mixed reality glasses Microsoft Holo Lens. There are a few drawbacks with this type in that it can be quite expensive to personally own one of these. They can range from $300 to $1,500, depending on which headset you end up choosing to own. Additionally, depending on the one you choose, the type of setup can be quite tricky. For example, the HTC Vive requires an additional setup with the lighthouse tracking system where it recreates the room using two infrared cameras, meaning you need a large enough space in order to use the device properly. Additionally, you are required to have a decent computer that can run such a device since you are essentially rendering twice as much as you normally would. In comparison, if you chose an Oculus Quest, there is no additional setup since the headset is its own self-contained computer. Regardless, with all of these headsets, they bring several advantages. First is the ability to have 6 degrees of movement. This means that you are able to move within the virtual space in 6 different ways, back, forward, left, right, pitch, yaw, and roll. This in comparison to 360 videos, means that you can move around and experience the space way more than just simply sit there and let the experience play for itself. Another advantage with such headsets is that they allow you to have a more immersive experience with the higher resolution screens and comfortable controllers. With higher resolution screens, one can be placed into a 3D environment and experience a whole new world without ever leaving the comfort of your home(or room).

Link to site where HW1 is hosted: https://stasioo.github.io/Personal_Website/hw1.html