

AR/VR Technology Overview

In this document, we will go over the potential technological impact of AR/VR technology, particularly within the mental health space. First, we will briefly outline each technology at a high level to provide an overall context. We will then present a few possible use cases. This document was created to be a high-level overview to provide a starting point for future discussions.

Technology Overview

Name	Description	Examples
Virtual Reality (VR)	<ul style="list-style-type: none">• Completely encloses the user within a virtual environment via a headset or multi-projected rooms.• User typically interacts with the world via controllers or gestures.• Users are typically limited within a pre-defined space (i.e. 4m by 4m square).• Users may obtain feedback through visuals in the headset, sound through speakers or worn headphones, or haptics through a controller	<ul style="list-style-type: none">• HTC Vive• Oculus Rift• Google Cardboard• Samsung Gear VR
Augmented Reality (AR)	<ul style="list-style-type: none">• A view of real objects in the world such that the view is augmented in some way.• Most commonly used through mobile devices or specialized headsets.• In addition to information overlays, 3D models could be added in to make a virtual object appear as if it was in the world.	<ul style="list-style-type: none">• Pokemon Go• Google Lens• Microsoft Hololens
Virtual Humans	<ul style="list-style-type: none">• Technology utilizing AR/VR for the creation/re-creation of a lifelike human in virtual space.• Images are typically captured from real people, then animated and projected in a realistic way to user.	<ul style="list-style-type: none">• Quantum Capture

Potential Use Cases

Experiential treatment – By utilizing virtual reality’s ability to create an experience around the user, there could be potential for the technology to be used to address phobias or otherwise difficult situations.

For example, should a user have acrophobia, we could place this user on gradually higher positions so that they become slowly acclimated to height.

Augmented Dementia Care – By utilizing augmented reality's ability to interlace information throughout the world, we may be able to provide better care for older adults whom are afflicted with dementia. We can place digital reminders throughout the world on objects, or people to help alleviate confusion. Alternatively, we can place directional arrows or other visual aids in an effort to improve quality of life.

Conclusion

The power in AR/VR technologies is in their ability to create or reshape user's experiences within their world. While these technologies have seen drastic success in the entertainment space, the medical and, particularly, the mental health space has seen limited movement. Therefore, we are excited to explore how this emerging technology may benefit the mental health space.