



# VR FOR FIRST-TIMERS

Workshop by the Media  
Creation Lab team

# Agenda +



## Introduction to VR

- What is Virtual Reality
- Humanistic Overview
- Types of VR Experiences
- VR Applications and Considerations

## Introduction To Oculus Quest

- The Oculus Quest
- Using the Oculus Quest
  - Strategies for Motion Sickness
  - Headset
  - Controllers
  - Guardian: Stationary
  - Guided Non-Interactive Activity
  - Guided Interactive Activity
- Questions
- Media Creation Lab



# INTRODUCTION TO VR



# What is Virtual reality? +

## **Precise (contemporary) definition:**

*An artificial environment that is experienced through sensory stimuli (such as sights and sounds) provided by a computer and in which one's actions partially determine what happens in the environment*

(Merriam-Webster, n.d.)

## **Broader definition:**

*An artificial and ad hoc environment that is experienced through sensory stimuli (such as sights and sounds) and which facilitates an intended experience*



# What is Virtual reality? +

Storytelling (displaced communication) is fundamental and unique to humans.

It puts the listener/viewer/reader/player **in a different place (time/space)**.

VR and its technology is a contemporary version of this age-old activity.



# Humanistic Overview

## + Our History



### EARLY 3D

- 1788: Panorama
- 1838: Stereoscope
- 1939: Vitarama aka Cinerama

(Barker, n.d.)



### WAR

- 1939–1945: Flight sims
- 1940s–1950s: "Whirlwind" & "SAGE"

(Teslasuit, 2017)



### VISIONARIES

- 1960: HCI
- 1962: Sensorama
- 1964: "ultimate display"
- c 1967: HMD
- 1970s: 3D models

(Heilig, 2014)



### BOOM-BUST

- 1970s–1980s: Data gloves
- Mid-1980s: NASA VIEW, "virtual reality"
- 1980s–1990s: Rise & fall

(Scientific American, 1987)



### ADJACENT ADVANCEMENTS

- 1990s: *Doom*, online role-playing games; science/medicine applications

(QuasarTE, 2010)



### STEADY REVIVAL

- 2000s: Wii, PS Move, Xbox Kinect
- 2012: Oculus Rift

(Evan-Amos, n.d.)

(Lowood, 2022; Virtual Reality Society, 2019)

# VR Experience Labelling



People label VR experiences based **levels of immersion / interactivity**.

The immersiveness of any VR experience is subjective.






However, its main determinants/dimensions are

- 1. Extent of illusion** (telepresence), or 'being there' (Lowood, 2022)
  - Highest level: HMD obscures real-world & shows (realistic) 3D visuals
- 2. Extent of interactivity** (agency) with/within world
  - Highest level: Motion-sensing controllers allow immediate/obvious (true-to-life) actions



# VR Experiences

## Context/Scope

-  **VR:** All-digital interaction, no perception of real-world
-  **AR (Augmented Reality):** Interaction with real world & intermediary digital parts
-  **MR (Mixed Reality):** Interaction with both digital & elements
-  **XR (Extended Reality):** Umbrella term AR-MR-VR 'continuum' (Tremosa, 2022)
-  **Metaverse:** General synonym for "cyberspace" (Ravenscraft, 2022);  
no singular metaverse

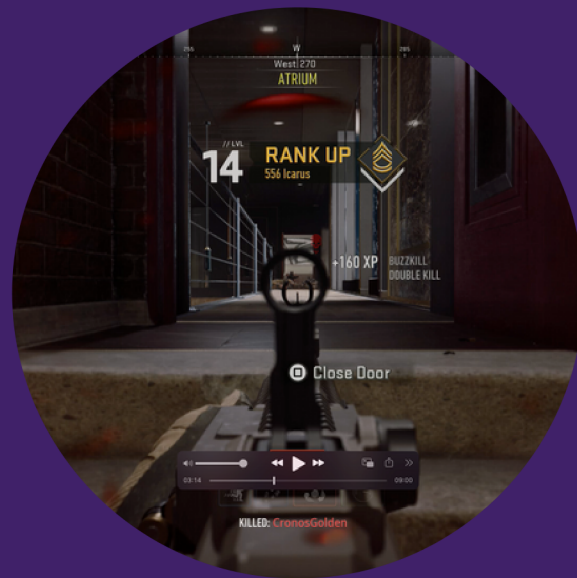


# VR Experiences


## Spectrum of immersiveness/interactivity



 **Example 1**  
Playing video game




- Immersion
- Interactivity

 **Example 2**  
Using vehicle simulator  
(physical controls, no HMD)




- Immersion
- Interactivity

 **Example 3**  
Viewing movie within VR  
headset with surround  
sound



- Immersion
- Interactivity

 **Example 4**  
Playing game within VR headset  
and motion controls



- Immersion
- Interactivity



**VR IN *YOUR* FIELD OF  
WORK/STUDY?**



# Virtual Reality + Applications & Considerations

## Practical/potential applications

- Vocational training
- Health & well-being (e.g. Davidson, 2022)
- Education (e.g. York University, 2022)
- Enterprises involving physical spaces

## Concerns/consequences for consideration

- Not commercial viable yet (e.g. Leswing, 2022)
- Not economically accessible to all
- Not adaptable yet (e.g. Ugolik Phillips, 2020)
  - Compare with video-game industry:
    - Xbox Adaptive Controller, Sony Project Leonardo
    - *The Last of Us Part II*
    - Game Accessibility Guidelines
- Privacy/security issues (e.g. Everson Layden, 2022; Vittorio, 2022)









# INTRODUCTION TO OCULUS QUEST



# The Oculus + Quest

"The Quest is the first fully functioning VR headset from Oculus that is completely wireless and requires no additional hardware to enjoy" (*Bhphotovideo*) all virtual non-interactive and interactive experiences such as:

-  **Stream TV, movies, and videos**
-  **Play immersive games, from the comfort of your home.**
-  **Create interactive experiences**
-  **Explore both real and un-real worlds**

Oculus Quest



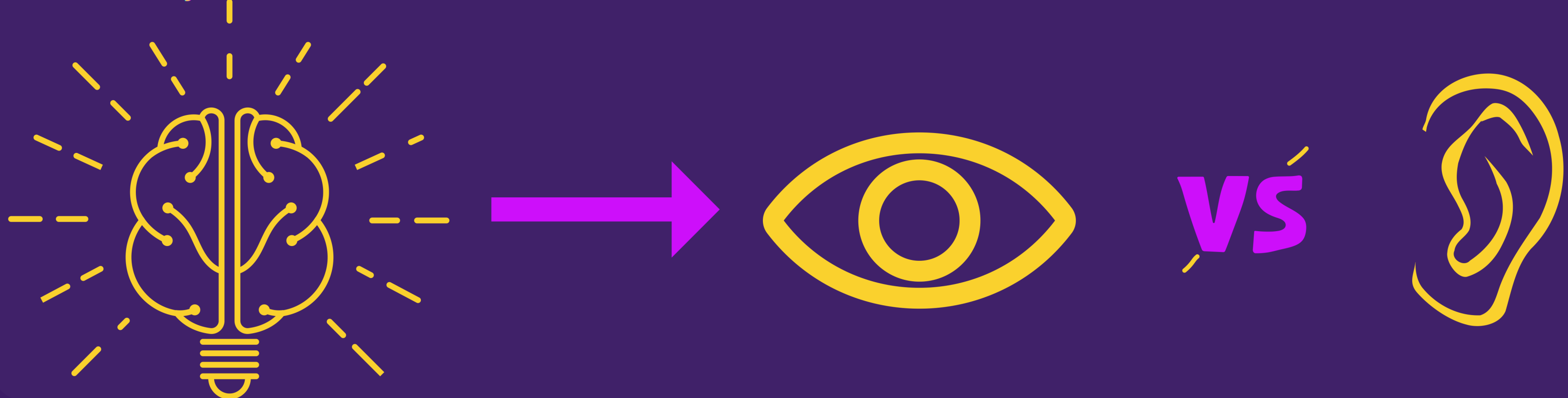
Oculus Quest 2

# Understanding Motion Sickness+

Motion sickness (*simulated*-motion sickness) is a common outcome of VR experience.

It results from a sensory-perception discrepancy between your visual system and your motion/balance system.

Brain: Eyes vs inner ears

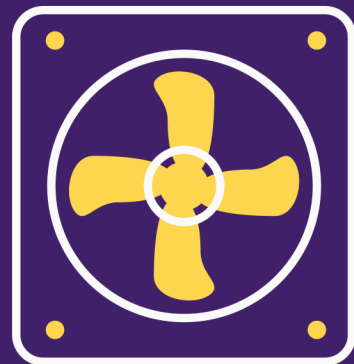


# Using the Oculus Quest + Mitigating Motion-Sickness



## User-controlled (e.g. Whitson, 2021)

- Clean lenses
- Suitable inter-lens distance
- Comfortable environment (air flow, temperature)
- Persistent, tactile stimuli (fan, rug)
- Low-intensity experiences
- Short sessions (desensitization)

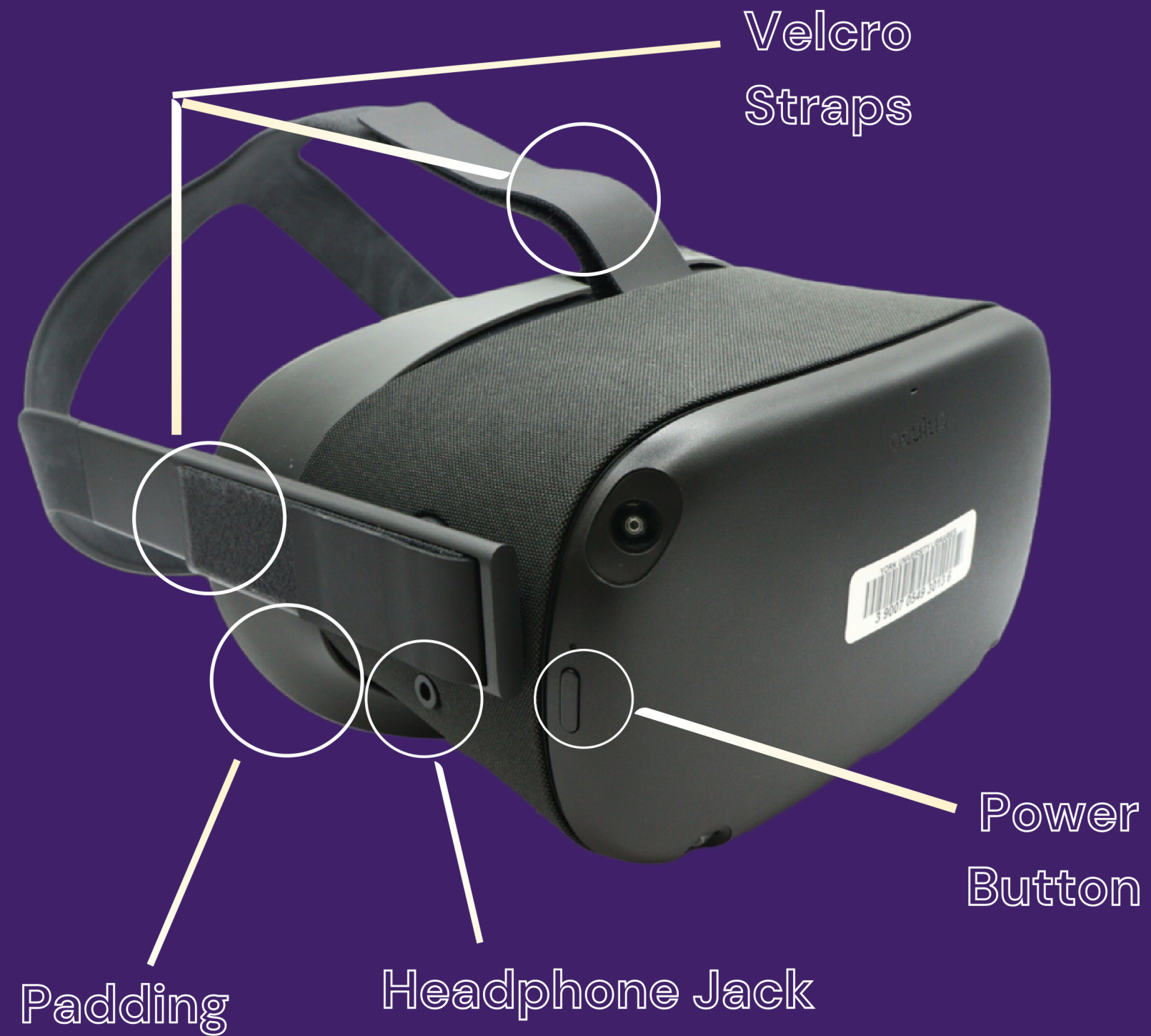


## Developer-controlled

- Decreased field of view
- Disabled motion-blur
- Fixed, on-screen indicators
- View stabilization
- Alternative options for movement/turning



# Oculus Quest Headset Overview





# Oculus Quest Using the Headset



**1**

Pull up the headband to loosen the headspace



**2**

Place the headset on your head and pull down the headband



**3**

To loosen or tighten the straps, remove and then pull the Velcro strap in the direction of the arrows



**4**

Once the headset is a comfortable fit, re-attach the Velcro strap to the headband by moving them in the direction of the arrows

# Oculus Quest Headset Overview

Adjustable  
Straps



Face Padding

Power  
Button



Volume Button



Lens Spacers

**To adjust the focus, move the lenses towards the direction of the arrows to move them closer or farther apart**

# Oculus Quest 2 Wear the Headset



**1**

Place the head set on your head, and bring down the straps past/below the base of your skull



**2**

Pull up the adjustment straps at the top of the head, until it detaches from the headset



**3**

Keep pulling the straps until the headset is flush with your face. Then push down the strap until it is secured to the velcro strip at the top of the headset

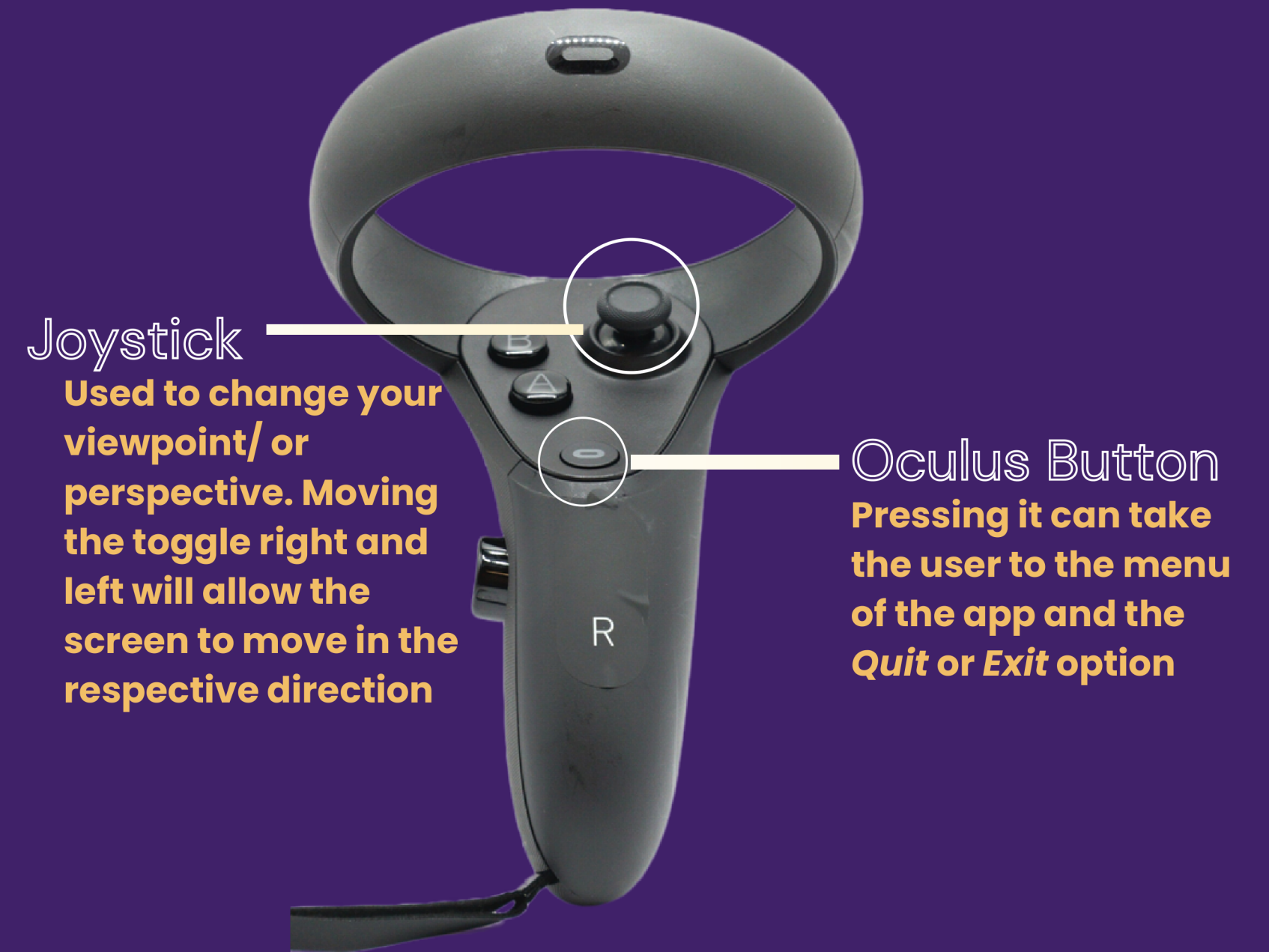


**4**

Move the two adjustable knobs left to right, to tighten or loosen the headset

# Using the Controllers

## Oculus Quest



# Using the Oculus Quest + Guardian

**A Guardian is a virtual boundary where users can define a play area for themselves. It is a built-in safety feature that prevents you from getting too close to an object.**

**A Stationary Guardian requires the user to remain in one place, while a Roomscale Guardian allows the user to move freely within a selected place.**



(Meta Quest, 2021)

# Using the Oculus Quest

## Setting the Floor Level



Turn on the Oculus Unit and follow the on-screen instructions to connect it with the mobile app. This step has already been completed for you

1

Secure the controllers to your wrists, using the safety Straps



2

Place the headsets on your head and adjust the focus



3

Set the floor Level by placing the controllers on the floor

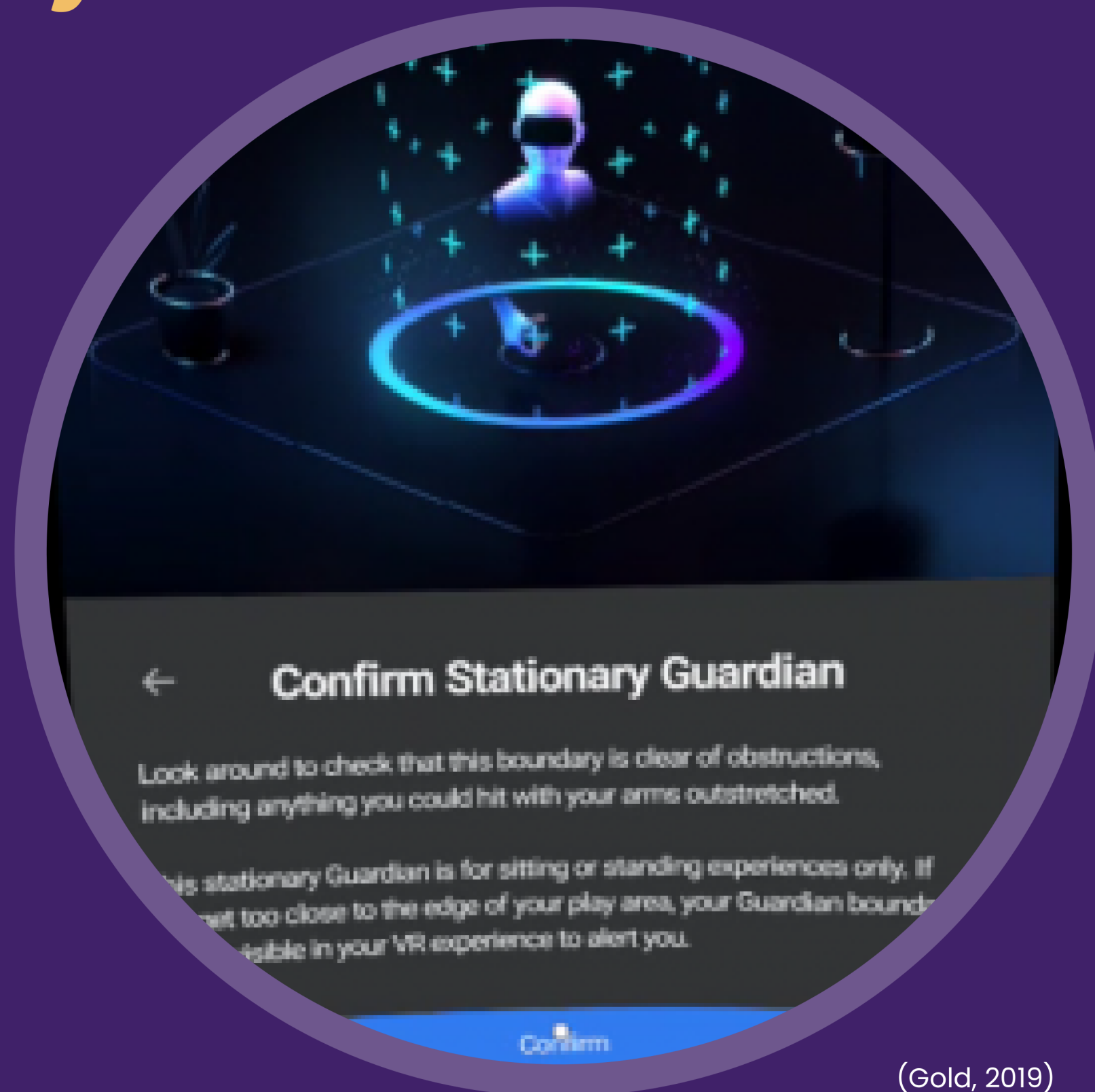


(Meta Quest, 2021)

# Using the Oculus Quest Creating a Stationary Boundary +



Sit in one place and select either *Stationary Guardian* or *Switch to stationary Guardian*. Once a stationary Guardian is set, a glowing blue circle will appear on the 'ground.'



(Gold, 2019)

# Non-Interactive Activity

## Universal Menu +

1

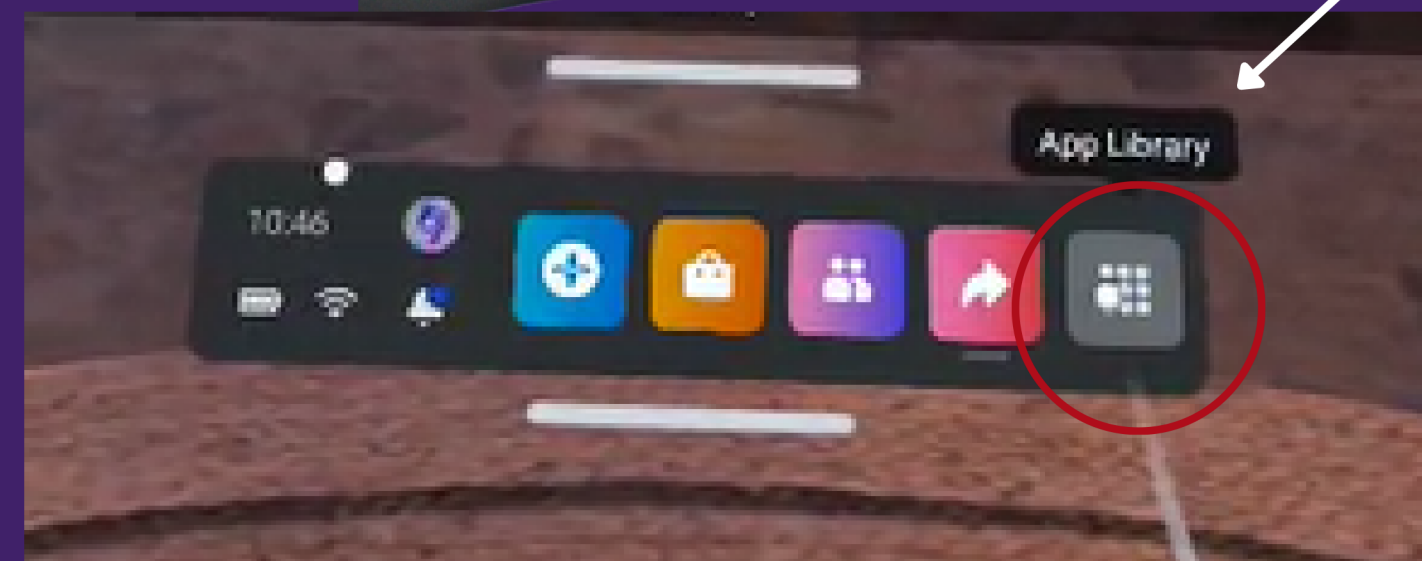
Press the Oculus button, to enter the home screen

2

On the UNIVERSAL MENU find the APP LIBRARY and press the trigger button to enter



Oculus Button



App Library



# Non-Interactive Activity

## Liminal +

**1** Find the *Liminal* app and select it using the trigger button



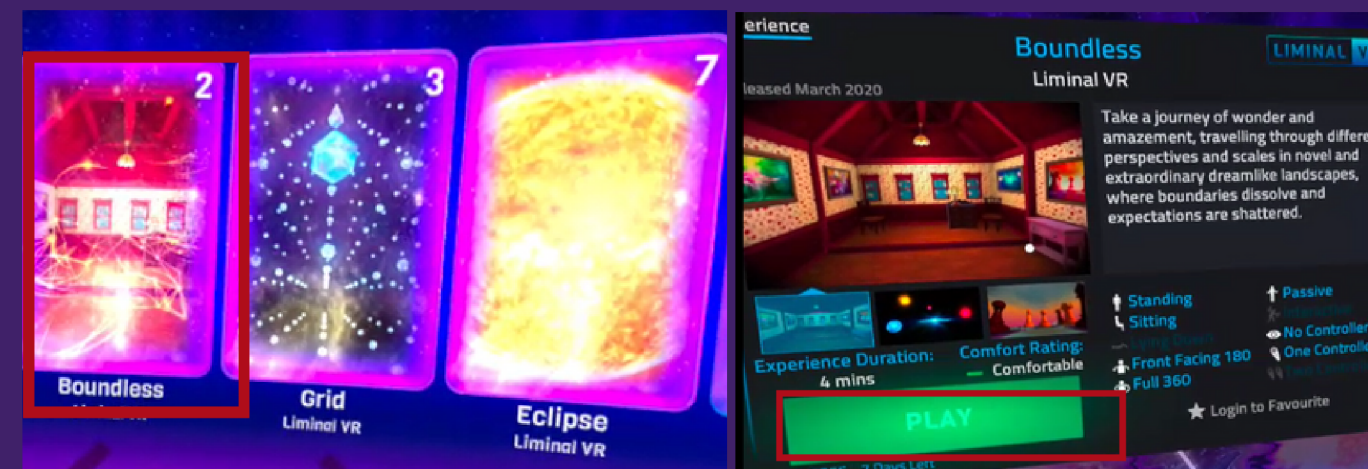
(Liminal VR, n.d)

**2** Once the app is open, select *Awe*, which will take you to a new screen



(Liminal VR, n.d)

**3** Click on *Boundless* experience and then select *Play*



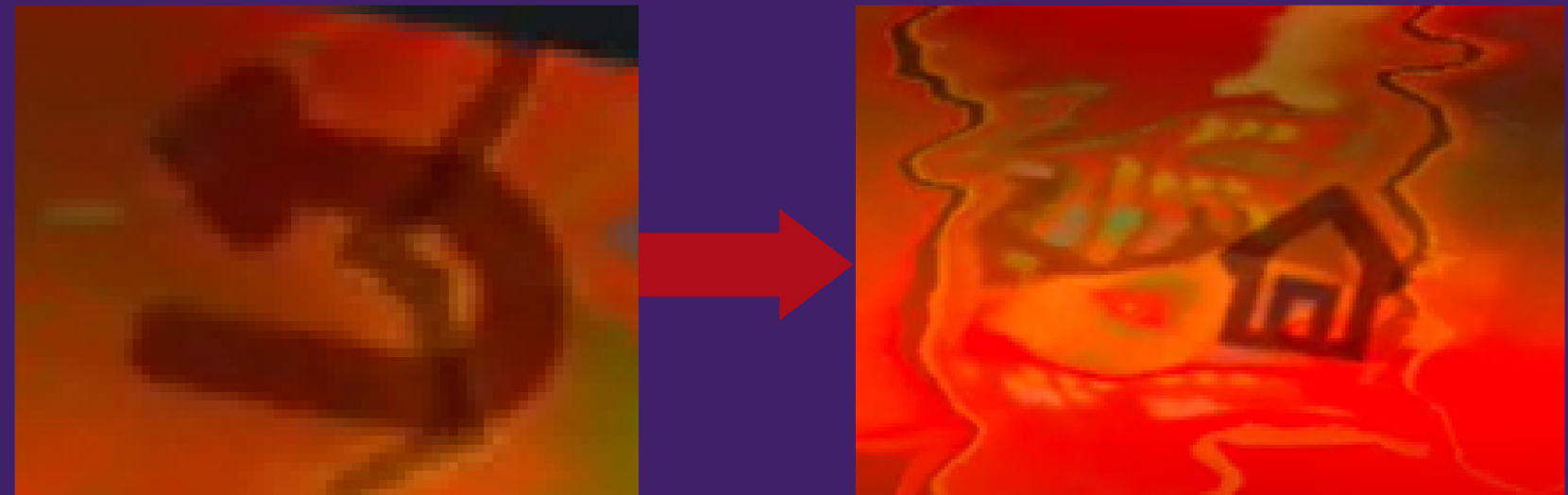
# Non-Interactive Activity

## Liminal +

1 Use the *Arrow* button and then the *Home* button to return to the menu screen

2 Select *Calm*, which will take you to a new screen, and select *Aurora*

3 Select *Play* and choose *3 mins* for the length of your experience

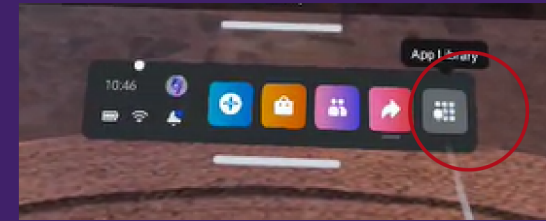


# Interactive Activity

## First Steps(10-15 mins) +

2

Click on *App Library* and Select First steps using the trigger button



App Library



***Thoughts or  
Questions for us?***

# Media Creation Lab +



(416) 736-2100 ext 33910



diginit@yorku.ca



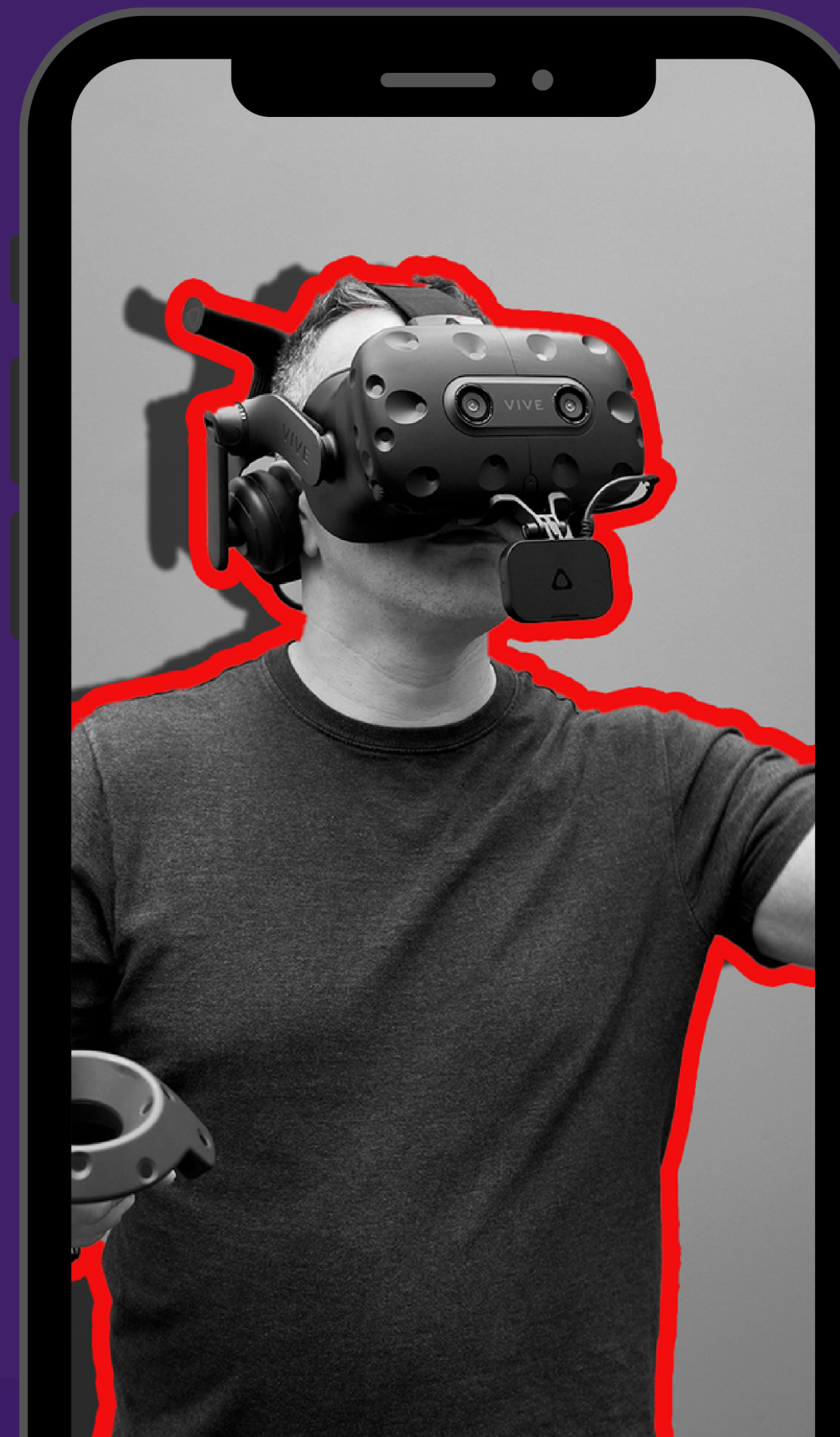
<https://bit.ly/yorku-mcl>



Scott Library Room 207



Discord server #6450





**THANK YOU**



## REFERENCES



**Barker, R. (n.d.).** *Rober Barker Panorama.jpg* ([https://upload.wikimedia.org/wikipedia/commons/4/49/Rober\\_Barker\\_Panorama.jpg](https://upload.wikimedia.org/wikipedia/commons/4/49/Rober_Barker_Panorama.jpg)) [Photo]. Wikimedia Commons. [https://commons.wikimedia.org/wiki/File:Rober\\_Barker\\_Panorama.jpg](https://commons.wikimedia.org/wiki/File:Rober_Barker_Panorama.jpg)

**Davidson, K. (2022, March 10).** Virtual reality therapy promotes wellness for adults living with Alzheimer's and dementia. *YFile*. <https://yfile.news.yorku.ca/2022/03/10/virtual-reality-therapy-promotes-wellness-for-adults-living-with-alzheimers-and-dementia/>

**Evan-Amos. (n.d.).** *Oculus-Rift-CV1-Headset-Front transparent.png* ([https://en.wikipedia.org/wiki/File:Doom\\_ingame\\_1.png](https://en.wikipedia.org/wiki/File:Doom_ingame_1.png)) [Photo]. Wikipedia. [https://commons.wikimedia.org/wiki/File:Oculus-Rift-CV1-Headset-Front\\_transparent.png](https://commons.wikimedia.org/wiki/File:Oculus-Rift-CV1-Headset-Front_transparent.png)

**Everson Layden, E. (2022, February 10).** Rutgers researchers discover security vulnerabilities in virtual reality headsets. *Rutgers Today*. <https://www.rutgers.edu/news/rutgers-researchers-discover-security-vulnerabilities-virtual-reality-headsets>

**Gold, M. (2019).** *Disable Guardian on the Oculus Quest* [Photo]. <https://frl.nyu.edu/disable-guardian-on-the-oculus-quest/>

**Heilig, M. (2014).** *Sensorama Simulator* [Image]. <https://www.engadget.com/2014-02-16-morton-heiligs-sensorama-simulator.html>



## REFERENCES



**Leswing, K. (2022, July 27).** Meta lost \$2.8 billion on its virtual reality ambitions during Q2. *CNBC*. <https://www.cnbc.com/2022/07/27/meta-reality-labs-lost-2point8-billion-in-q2-2022.html>

**Liminal VR. (n.d.).** *Liminal* [Photo]. <https://store.steampowered.com/app/1453730/Liminal/>

**Lowood, H. E. (2022).** virtual reality. In *Britannica*. <https://www.britannica.com/technology/virtual-reality>

**Merriam-Webster. (n.d.).** Virtual reality. In *Merriam-Webster.com Dictionary*. <https://www.merriam-webster.com/dictionary/virtual%20reality>

**Meta Quest. (2019, May 21).** *Setting up a Safe Play Area* [Video]. [https://www.oculus.com/safety-center/quest/?utm\\_source=www.google.com&utm\\_medium=oculusredirect](https://www.oculus.com/safety-center/quest/?utm_source=www.google.com&utm_medium=oculusredirect)

**Meta Quest. (2021, November 13).** *Quest 2 Setting Up Guardian*. <https://www.youtube.com/watch?v=GojevL05Avw>

**Ravenscraft, E. (2022, April 25).** What is the metaverse, exactly? *Wired*. <https://www.wired.com/story/what-is-the-metaverse/>

**QuasarTE. (2010).** *Doom\_ingame\_1.png* ([https://upload.wikimedia.org/wikipedia/en/d/de/Doom\\_ingame\\_1.png](https://upload.wikimedia.org/wikipedia/en/d/de/Doom_ingame_1.png)) [Photo]. Wikimedia. [https://en.wikipedia.org/wiki/Doom\\_\(1993\\_video\\_game\)#/media/File:Doom\\_ingame\\_1.png](https://en.wikipedia.org/wiki/Doom_(1993_video_game)#/media/File:Doom_ingame_1.png)

**Scientific American. (1987).** *VPL DataGlove* [Photo]. Encycloedia Britannica. <https://www.britannica.com/technology/virtual-reality/Entertainment#/media/1/630181/87812>





## REFERENCES



**Teslasuit. (2017).** 1929 – *The First Flight Simulator* [Photo]. Teslasuit. <https://teslasuit.io/blog/history-of-virtual-reality-ultimate-guide/>

**Tremosa, L. (2022).** *Beyond AR vs. VR: What is the difference between AR vs. MR vs. VR vs. XR?* Interaction Design Foundation. <https://www.interaction-design.org/literature/article/beyond-ar-vs-vr-what-is-the-difference-between-ar-vs-mr-vs-vr-vs-xr>

**Ugolik Phillips, K. (2020, January 29).** Virtual reality has an accessibility problem. *Scientific American*. <https://blogs.scientificamerican.com/voices/virtual-reality-has-an-accessibility-problem/>

**Virtual Reality Society. (2019).** *History Of virtual reality*. Virtual Reality Society. <https://www.vrs.org.uk/virtual-reality/history.html>  
virtual-fly-home-new-1.jpg (<https://www.virtual-fly.com/wp-content/uploads/virtual-fly-home-new-1.jpg>). (n.d.). [Photo]. Virtual Fly. <https://www.virtual-fly.com/>

**Vittorio, A. (2022, August 30).** Metaverse technology opens up a wider world of privacy concerns. *Bloomberg Law*. <https://news.bloomberglaw.com/privacy-and-data-security/metaverse-technology-opens-up-a-wider-world-of-privacy-concerns>

**Whitson, G. (2021, April 22).** How to reduce motion sickness in virtual reality. *Wired*. <https://www.wired.com/story/how-to-reduce-motion-sickness-virtual-reality/>

**York University. (2022, June 29).** New funding expands use of VR technology in undergraduate chemistry teaching. *YFile*. <https://yfile.news.yorku.ca/2022/06/29/new-funding-expands-use-of-vr-technology-in-undergraduate-chemistry-teaching/>