

Final Exam: Human-Computer Interaction
Human-Computer Interaction Design in Virtual Reality

Due on D2L May 9th by 11:59 p.m.
(30% of Total Grade)

We know that we learn best by doing. This Equal Reality VR experience is designed to provide its users with a more practical understanding and awareness of Unconscious Bias by giving users a first-hand experience of bias. With this assignment, you are not being asked to partake in the complete course on understanding bias, that would take several hours to do so. Rather your goal with this assignment is to act as the VR Developer/Interaction Designer and how you might improve upon the experience to meet the aims of Equal Reality VR. In this assignment you will quickly partake and interact with the Equal Reality VR experience and apply the concepts you have learned in class to the design of the interaction.

Note: Another aim of this assignment is to get you immersed into VR in case you have never done so and to experience VR in non-gaming/entertainment context, which may be new for some of you. In the end, my hope this will be a fun, worthwhile, and memorable experience for you.

Accessing the VR Experience: We have several VR headsets with the Equal Reality software installed. Please use this link to sign-up for a half-hour timeslot to use a headset:

https://docs.google.com/spreadsheets/d/1pLVZpTe_y2ZT_8AZV9hn7_YsQF_HXrHby8cri_gLXQg/edit#gid=0

Also, be sure to read the notes on the right side of the linked document.

The location on campus is the **Barnard 350** where the TA will be there to provide any instructions or assistance on using the headsets/software itself.

Problem #1 (60 pts):

After you have spent some time interacting with the Equal Reality experience (see instructions above) -- for each of the Universal Principles of Design below, state if you believe the VR developers did or did not meet each of the following design principles. If they did, explain how they did so. If they did not, explain how they could have improved the experience. Please make sure you explain in enough detail so that we understand your rationale.

- ☐ Affordance
- ☐ Accessibility
- ☐ Alignment
- ☐ Familiar Language & Metaphors
- ☐ Flow
- ☐ Forgiveness
- ☐ Mental Model
- ☐ Typography
- ☐ Uncanny Valley
- ☐ Visibility and Feedback

Problem #2 (20 pts):

Part 2A (5pts). Explain specifically how you would help to mitigate cybersickness in the Equal Reality experience (not in a generic form/application, but applied to this experience)?

Part 2B (10pts). Is this experience immersive? With that answer, how might you measure the amount of “immersion” of this experience?

Part 2C (5pts). How would make the Equal Reality interaction experience more inclusive (accessible)?

Problem #3 (20 pts):

Described below are the aims the VR Developer / Interaction Designers had in mind when designing the Equal Reality experience. Based on your brief interactions with Equal Reality and what you have learned from the course, what are somekey interaction design features you believe are needed to better meet the aims below? Explain your rationale in detail.

The Equal Reality experience aims include the following:

- ☐ More practical understanding of bias
- ☐ Common shared experience (less imagination bias)
- ☐ Greater empathy
- ☐ More behavior change
- ☐ Understand what unconscious bias is, and recognize when unconscious bias occurs
- ☐ Understand why it's important to understand unconscious bias and inclusion.
- ☐ Explore how unconscious bias and inclusion are relevant in the working world.
- ☐ Identify strategies to counteract potential unconscious bias.
- ☐ Identify strategies for inclusion in the workplace.
- ☐ Identify microaggressions in the workplace

Good luck 🍀!

Final Exam Rubric

Problem #1	30 Points	40 Points	50 Points	60 Points
Critiquing the Experience in Terms of UPD Components	You describe at least six of the 10 UPD components given in the problem and loosely connect the components to relevant moments in the VR experience.	You describe at least six of the 10 UPD components and establish an opinion on if that component was met or not in the VR experience.	You describe at least six of the 10 UPD components, explicitly establish an opinion on if that component was met or not, and support your opinion with evidence from the VR experience that draws a clear connection back to the UPD component.	For all 10 UPD components presented in the problem, you describe the UPD component, explicitly establish an opinion on if the component was met or not, and support your opinion with evidence from the VR experience that draws a clear connection back to the UPD component.

Problems #2 a, b, c	10% credit for each respective problem (problems #2a, #2b, #2c)	50% credit for each respective problem (problems #2a, #2b, #2c)	100% credit for each respective problem (problems #2a, #2b, #2c)
Answering key VR interaction design aims (immersion, cybersickness, and accessibility)	You vaguely touch on key design aims, your answers are not well supported. You answer mostly based on your intuition, rather than documented design principles.	Your answers are somewhat supported (based on the course lecture material) but lack full justification. You partially rely on your intuition.	You provide strong justification (based on the course lecture material) on your approach to answering the key needs. You rely not on your intuition but on sound documented design principles.

Problem #3	10 Points	15 Points	20 Points
Revising the Experience for a Better HCI	You present features of a redesign to improve the VR experience but without any clear connections back to the concepts of this course.	You present features of a redesign to improve the VR experience that clearly connect back to several of the main concepts from this course.	You present features of a redesign that clearly connect back to several of the main concepts from this course and intentionally improve the experience towards the aims of the company.

NOTE Problem #3: Please do NOT think you need to cover every one of the given “Equal Reality experience aims” individually. That list is a set of specific aims that together form a holistic mission for the company. You can speak on how redesign features move the company towards that mission, citing specific aims as you see fit.