

## CS 498: Virtual Reality

### MP3: Comfort & Best VR Practices

#### Due October 22nd

You will review 3 VR experiences according to the Oculus Best Practices Guide (see Piazza for .pdf). For each VR experience, you will provide a score (1 to 10) for 4 criteria outlined below and write up a paragraph (100 - 200 words) that explicitly explains the reason for each score. There is no right or wrong score. You will be graded on your ability to justify the score you give according to the Oculus Best Practices Guide. This assignment is meant to turn you into a VR snob; pick apart every little design decision you can think of. Does an experience require you to focus on an object .5 meters away? Well, the Best Practices Guide says objects of focus should be placed at least .75 meters away to avoid eyestrain. Does an experience use normal mapping? Well according to the Best Practices Guide, normal mapping does not account for binocular disparity so you should use parallax mapping instead. There is no detail too small, no error too minor for you to pick out and harp on.

#### VR Experiences (pick 3)

1. [Mythos of the World Axis](#)
2. [Streetview VR](#)
3. [Guardians of the Wind \(Windlands\)](#)
4. [I Expect You to Die](#)
5. Unreal Engine 4 'Showdown'

[\*demos are located on (V:) drive of lab PCs]

## Ratings

1. **Image quality:** Anything having to do with rendering quality (e.g. pixels, aliasing, and frame rate) should be addressed here. The computers in 4240 are so beastly that struggling to hit 75 fps is a mistake on the part of the developer, e.g. Do 'jaggies' detract from the immersion? Does judder make you nauseous? Does it use rendering techniques that are not well suited to VR?
2. **User interface:** This covers how easy it is to control the experience and how it delivers information (e.g. controls, instructions, and feedback). Try to distinguish between 2D conventions ported to VR and features that have clearly been designed for VR, e.g., Are the controls difficult to use? Does it use head rotation / position as an input? Does it ask you to read tiny text? Does it present information so close that it produces eyestrain? Does the experience forego traditional menus by presenting information as part of the virtual world?
3. **Movement:** This covers everything relating to acceleration, rotation, and speed. Traditional simulator sickness caused byvection falls under this category, e.g., How much acceleration does the experience involve? Is the acceleration instantaneous or gradual? Does movement make the experience uncomfortable? Why, or why not?
4. **Immersion/Presence:** This covers how "real" the experience feels. Focus on the perception of depth, scale, and motion. An experience that disturbs any one of these factors will struggle to create a feeling of presence, e.g. How well does the experience fool your brain? Do you actually feel like you are in a different environment? What factors contribute to immersion, or lack thereof?

## Grading

Each of the 3 reviews counts for 1/3<sup>rd</sup> of your assignment grade. Reviews will be graded holistically (and generously), but there are a few guidelines: Each review must cover all 4 ratings. For each rating, you must include a score (out of 10) and provide at least 1 concrete example of something the experience does well or poorly. Each review must include at least 2 suggested improvements that are consistent with the Best Practices Guide. Reviews that do not fit the 100-200 word limit will automatically lose 20%. Spelling and grammar mistakes will cost points if they make your writing difficult to understand. Try not to stress too much about specific grade requirements. It will be painfully obvious if you did not read the Best Practices Guide or did not put enough thought into the reviews. I strongly encourage you to make explicit reference to specific points from the Best Practices Guide whenever possible. If you explain your ratings well, and it is clear you have read and understood the Best Practices Guide, then you will get full points.

## Submitting

Submit your reviews on Compass as a double-spaced .pdf. The filename should contain the NetIDs of everyone in the group separated by underscores (e.g., MP3\_widdwsn2\_aiellis1.pdf).