Lecture 1 Review

- What is the definition of VR?
- What will you be learning in this course?
- What makes a good VR experience?
When did VR start?
When did VR start? Paintings?
When did VR start?
When did VR start?
When did VR start?
When did VR start? Motion pictures?

https://www.youtube.com/watch?v=IEqccPhsqgA

1878 Muybridge
Realism vs Simplicity in Cartoons
Realism vs Lower Cost and Portability
How many FPS are enough?

https://www.youtube.com/watch?v=-Qk7ZSXujRo
Evolution of Computer Games
Realism vs Simplicity in Computer Games
History of VR

Introducing...

**Sensorama**

The Revolutionary Motion Picture System that takes you into another world with

- 3-D
- Wide Vision
- Motion
- Color
- Stereo-Sound
- Aromas
- Wind
- Vibrations

SENSORAMA, INC., 855 GALLOWAY ST., PACIFIC PALISADES, CALIF. 90272
TEL. (213) 459-2162
Headsets vs Cave
Birds-Eye View: Hardware

Displays (Rendering):
- Visual:
- Audio:
- Touch:
- Smell? Taste? Vestibular?

Tracking Hardware Components:
- IMU’s:
- Magnetometers:
- Cameras

Controllers:
- 

Lens:
- 

Computer:
- CPU:
- GPU:
Definition of VR

Inducing targeted behavior in an organism by using artificial sensory stimulation, while the organism has little or no awareness of the interference.
A sensor is a transducer that transforms the physical world energy into a signal.
Sensors vs Physical World

Each sensor moves through space or changes in some way. These changes:

- Are controlled by the brain
- Form a space of configurations

In how many different ways can the world move with respect to these sense organs?
Example: Ear
Example: Eye
VR System: Hardware, Software & Perceptual Psychology
Sensors in Physical World: Reality
Sensors in Physical World: Virtual Reality
Audio Displays

Two Familiar Settings:
Visual Displays

Two Settings:
HMDs vs Headphones
Birds-Eye View: Hardware

Displays:
- Visual:
- Audio:
- Touch:
- Smell? Taste? Vestibular?

Tracking Hardware Components:
- IMU’s:
- Magnetometers:
- Cameras:

Controllers:
- 

Lens:

Computer:
- CPU:
- GPU:
Review

- What is the definition of VR?
- What is a sensor?
- What are the benefits of realism in VR world graphics?
- What about cartoons/fantasy?
Homework

- Chapter 2.1 of Steve Lavalle’s VR online book VR Hardware
- Machine Problem 1 - Not yet (Waiting for the lab)
Following slides were not used because the lab has technical issues
First Homework Assignment!

- Machine Problem (MP) 1 will be released in the next few days!
- See course website under Assignments tab.
- You must work with a partner; find a buddy on Piazza
- MP’s are submitted on Compass. Only one of the partners should submit the zip file to us. Be sure to name it with both NetID’s so we know who it’s for.
- Other policies to know regarding assignments are on the course website (late submissions, etc)
Reminder about homework & expectations

- Lectures will be recorded, but why not come to class?
- Read the book! It’s free and explains things well
- Check Piazza often - updates about class, deadlines, etc
- MP’s are to be done in pairs, class projects are in groups of 3 to 5
- There are only 20 computers and 200 students, so start on your MP’s early or you might have trouble getting on a computer!
Note..

You do not need to be a CS major to do well in this course!

➢ For MP’s, work with someone who codes
➢ Talk to the TA’s, they’re super helpful
Class Projects

- Coolest part of this course → you get to create a real VR experience!
- Projects are large part of your final grade & give you chance to boost it if you struggle with the MP’s or exams
- Check Piazza for opportunities to work with professors on campus
- Look up the VRProjectMania Facebook page to see what students have done in past semesters
- Don’t make another first person shooter, escape room, or maze… use this opportunity to see what has already been developed and create the killer app!