CSE 190: Virtual Reality Technologies

LECTURE #8: HEAD-MOUNTED DISPLAYS

Announcements

Homework project 2
- Due Friday, May 4th at 2pm
  - To be demonstrated in VR lab B210
  - Upload code to Ted by 2pm

Opportunity at Clarke Center

The Center for Human Frontiers at the Qualcomm Institute is looking to hire **paid student interns** with development experience in **Unity, C#,** procedural computer graphics and virtual/augmented/mixed reality technologies. Projects involve developing interactive visualizations that integrate biometrics into simulations. Additional interests in neuroscience and audio/video production is a plus.

A secondary project will look at audio augmented reality as a means for engaging with non-human subjectivity and the complexity of the biosphere.

Interested students should write to Patrick Coleman at **pcoleman@ucsd.edu** with a cover letter, resume, and links to recent work that demonstrate your skills.

Virbela

Virbela is recruiting virtual world programmers, computer graphic modelers and web developers as either summer interns and/or entry-level employees. Virbela develops virtual worlds for a wide range of clients. They are currently housed in the Qualcomm Institute Innovation Zone.

Virbela is particularly interested in people with experience in Unity and C# for virtual world development, as well as those with 3D modeling experience (environments and characters).

Additional appointments in web development and data analytics are also possible. Contact Alex Howland ahowland@virbela.com

Head-Mounted Displays

Head Mounted Displays

Have CRT or LCD screens with special optics in front of the eyes

Display occludes real world

Provide a stereoscopic view that is updated with the user's head motion

Sensics PiSight

Released April 2006

2200x1200 color pixels per eye

150 degrees field of view

24 OLED microdisplays

6 DOF tracking

$200k

HMDs – Advantages

Provide an immersive experience by blocking out the real world

Easy to set up

Do not restrict user from moving around in the real world

Relatively inexpensive

Can achieve good stereo quality

HMDs – Disadvantages

Poor resolution and field of view (FOV)

Do not take advantage of peripheral vision

Isolation and risks related to not seeing the real world (e.g., stumbling)

Can be heavy and uncomfortable, cumbersome to put on