VR Lecture DEJ (21 Nov 08)

1. Paradigms:
   1. PC: Desktop
   2. Video Games: No coherent paradigm. Elements of many.
   3. VR: Needs a decent paradigm.
2. Video clips on VR hype, lousy video game
3. Current State: many elements of VR in use
   1. G-speak: video showing
      1. multiple projectors on wall
      2. hand gestures as commands
      3. Minority Report and other similar examples
4. VR and Sensory Input
   1. Sci Am cover: guy w long hair
   2. HMD was first: Utah using tracked input
   3. CAVE: YouTube video explaining it: CAVE – a Virtural Reality Theoater (1993)
      1. Stereo glasses provide overlaid data
      2. Scale is a significant aspect
   4. Hamster Ball immersive environment
   5. Sesics: high detail with small tiled images in hi res
   6. 3D image
      1. Fishbowl display:
      2. Layers in a display to give a 3D effect
   7. Touch req’s head tracking and realtime display
   8. Contact feedback: force feedback
      1. Haptic
      2. Tactile
   9. Use accelerometers to get speed, position, etc
   10. WIIRemote YouTube Display (Johnny Lee, CMU)
       1. *Head Tracking for Desktop V R Displays using the WiiRemote*
          1. Shows camera tracking via IR instead of head tracking
   11. Handtracking:
       1. Polhemus (Data Glove)
       2. Power Glove
       3. Devices are uncomfortable and tiring to use
       4. Body tracking in animation: motion capture
   12. Sound
       1. Vets are more sensitive to audio than video!
       2. Movies use sound in a very sophisticated way
   13. Sound: very effective
       1. Common effect in movies
   14. Smells
   15. Does not include air movement and temperature
   16. Does not include treadport