CS677 Human Computer Interaction/ Virtual Reality

Sudhanshu Kumar Semwal
Department of Computer Science EN180
http://www.cs.uccs.edu/~semwal
Phone: 262-3545. E-mail: semwal@redcloud.uccs.edu

March 9, 2007

Chapters from the Virtual Reality Technology by Burdea and Coiffet:

- Chapter 1: Section 1.1 (What is VR); Section 1.2 (the three Is); Section 1.3 (A short history of VR); Section1.4 (towards commercialization).
- Chapter 2: Virtual Reality Tools: Section 2.1 (3D position Sensors, see lecture notes); 2.2 (trackballs, briefly); Section 2.3 (3-D probes, see lecture notes); Section 2.4 (Sensing gloves, see lecture notes); Section 2.5 (Stereo Viewing Devices); Section 2.6 (3D sound generators, see lecture notes).
- Chapter 3: Touch and force feedback: Section 3.1 (touch feedback is different from force feedback); Section 3.2 (virtual touch/force-feedback requirements, briefly); Section3.3 (touch feedback, briefly, see lecture notes); Section 3.4 (Force feedback, briefly, see lecture notes).

And the following technical papers:

- Surround-Screen Projection-Based Virtual Reality: The Design and Implementation of the CAVE, Cruz-Neira, Sandlin and Defanti
- Rapid Control through Virtual 3D Space, Mackinlay, Card, Robertson
- Immesive Video, Moezzi, katakere, Kuramura, Jain
- A head-mounted three dimensional display by Ivan E. Sutherland.
- A survey of Position Trackers by Kenneth Meyer, Hugh L. Applewhite, and Frank A. Biocca apart from other position trackers a good discussion on optical position trackers, see lecture notes.
- Transforming Human Hand Motion for Telemanipulation by Thomas H. Speeter.

- Artificial Reality with force-feedback: Development of Desktop virtual space with compact master manipulators.
- Optical Tracking Paper (Autocalibration for Virtual Environment Tracking hardware)
- Geometric Imprints (check semwalFG98.pdf)
- Scan&Track (check semwalGMODpaper.pdf)
- Making faces (check p55-guenter.pdf)
- Research Frontiers in Virtual Reality (discussion)
- Virtual Space Decesion Support Suystem and its applications to Consumer showrooms.