Guided Navigation

This paper provides us with a navigation method called "The River Analogy", using a given path and a constant flow (ex. a river) to move forward. However, the method of the River Analogy is more useful in a storytelling / narrative environment where the navigation is secondary.

Hands-Free Multi-Scale Navigation in Virtual Environments

In this paper are two approaches for hands-free navigation described. Step WIM and Navigation by Leaning. With hands-free navigation the user can use his hands to perform other actions while he is navigating.

Travel in Immersive Virtual Environments: An Evaluation of Viewpoint Motion Control Techniques (Only Page 44-52)

This paper provides us with various navigation methods, parameters and advantages and disadvantages of steering methods (Gaze-Directed or Pointing). But mostly the paper focuses the speed and acceleration parameters.

Steps and Ladders in Virtual Reality

This paper describes a navigation method for the interaction with stairs and ladders in virtual Reality. It shows the difference between the interaction with stairs and the interaction with ladders. For both it is more a whole body gesture than only a simple hand usage.

Taking Steps - The Influence of a Walking Technique on Presence in Virtual Reality

This paper provides a comparison between Gaze-Directed- and Hand-Pointing-Navigation. However, the main focus of the paper is on the presence (psychological sense of being there.

**Disney's Aladin First Steps Toward Storytelling in Virtual Reality Paper:**

Motion Sickness Room warmer -> discomfort greater

limit the duration of experience, discomfort increases with ride length.

Paper for general understanding of VR.

**VR-STEP: Walking-in-Place using Inertial Sensing for Hands Free Navigation in Mobile VR Environments**

Auto Walk Button at the Users Feet.

Walking in place treadmill controllers meantioned.

... Real walking can be implemented usingan optical tracking system [31, 30], but this approach doesn’t scale very well since the tracked space and the virtual space need to be the same size. ...

WHY? scaling of virtual space is possible.

Many informations about Walking in Place

**[31] Walking > Walking-in-Place > Flying, in Virtual Environments**

... Therefore research in locomotion has proceeded in two dimensions: development of wide-area trackers so users can really walk about [Ward, 1992], and development of body-active surrogates for walking:

treadmills, bicycles, wheelchairs, roller skates, and walking-inplace [Brooks, 1986; Christensen, 1998; Darken, 1997; Iwata, 1999; Slater, 1993].

Explanation that real walking is better than other kind of navigation in vr.

**[30] A Demonstrated Optical Tracker With Scalable Work Area for Head-Mounted Display Systems**

....Long-range trackers would allow greater areas to be explored naturally, on foot, reducing the need to resort to techniques such as flying or walking on treadmills. ...

Explains a tracking System with LEDS, that's what the mounted VIVE Setup does. Not more relevant than to get the insight that the problem exists with how to navigate in virtual Space.

**Balancing the virtual reality experience (Bachelor Thesis)**

For references in the area simulation sickness.

**Precise and Rapid Interaction through Scaled Manipulation in Immersive Virtual Environments**

User Design.

... acts on the user’s behavior in the environment to determine whether they have precise or imprecise goals in mind. Users do not need to explicitly switch to a new mode

if they are attempting to be precise and the interface does not inhibit the user from making rapid, imprecise translations by over-constraining manipulation. ...

... Effective mode swithcint is critical for users trying to perform tasks that require precision and responsiveness.

Idea : Fast and Slow Walk to scale space.

**Do We Need to Walk for Effective Virtual Reality Navigation? Physical Rotations Alone May Suf?ce?**

Conclusion: Only one of the eight dependent measures showed a clear and significant benefit of walking over real rotation (with a controlled button or joystick for the translation).

Different Navigation Strategies occur in so far, that they walk less but turn more.

Many References

WIP with controllers could be possible to realize. Or another part, where you can control a speed controller inside a game (like the airboat game d.k. what its called).