

## Summary 1:

### Trigger Walking: A low-fatigue travel technique for immersive virtual reality

Many VR application use virtual travel methods such as teleportation and auto-locomotion to make up for the limited physical space available in comparison to the VR environments. Although teleportation is useful for moving around large spaces, it reduces the spatial awareness and orientation in the user and similarly, auto-locomotion known to cause simulator sickness. Other method such as walking in place or using natural movements may cause fatigue over long periods. Studies have suggested that anticipating, or having control over future movement plays a major role in the reduction of motion sickness. A new way of movement using the triggers on a controller to mimic leg movement was proposed. Each hand holds a controller in a natural grip and the arms are relaxed at the user's sides to reduce the gorilla arm effect and allow the users to be a comfortable position. Navigation in trigger walking is made explicit upon touching the thumb pad because the trigger is used for other tasks such as grabbing in many existing games. Speed is controlled using the angle of the controller to the body, which the user can control by tilting their hands. Three ways of direction control was proposed, one using the right thumb pad, one by averaging both thumb pads, and one using the head orientation.

#### BibTeX:

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abstract={We present Trigger Walking, a low-fatigue travel technique for immersive virtual reality which uses hand-held controllers to move about more naturally within a limited physical space. Most commercial applications use some form of teleportation or physical walking for moving around in a virtual space. However, teleportation can be disorienting, due to the sudden change in the environment when teleported to another location. Physical walking techniques are more physically demanding, leading to fatigue. Hence, we explore the use of two spatial controllers that accompany commercial headsets to walk by taking a virtual step each time a controller trigger is pulled. The user has the choice of using the orientation of a single-controller, the average of both controllers, or that of the head to determine the direction of walking, and speed can be controlled by changing the angle of the controller to the Frontal plane.},  
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