Summary 2:

VizSpace: Interaction in the positive parallax screen plane

Usually, interactions with 3D environments are decoupled because the manipulation takes place in a plane that is not the viewing plane. VizSpace aims to deliver unique and fluid interactions by extends the conventional touch tables with hand tracking and 3D visualization so interaction can take place behind the screen, between the surface of the touch table and display screen. The hardware set up composes of a 3D stereoscopic projector for visualization, which is on top of the multi-touch table, and leap motion controllers for hand tracking. The user puts their hands between the projection screen and multi-touch screen and interacts with the object while getting feedback on their actions through viewing the tabletop display. Three applications, human body (identify human body function through touch), cube wave (lets users visualize sound), and blocks sandbox (lets user pick up blocks) applications were developed. A user group study was conducted to evaluate the usability of the system. Results showed that users found the system easy to learn and use. VizSpace may have the potential to provide collaborative workspaces through the increase in leap motion sensors. Head tracking could also be used to make sure the application is presented in the right prospective to each user.

BibTeX:

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abstract={The VizSpace is a physically situated interactive system that combines touch and hand interactions behind the screen to create the effect that users are reaching inside and interacting in a 3D virtual workspace. It extends the conventional touch table interface with hand tracking and 3D visualization to enable interaction in the positive parallax plane, where the binocular focus falls behind the screen so as not to occlude projected images. This paper covers the system design, human factors and ergonomics considerations for an interactive and immersive gesture-based visualization system. Results are presented from a preliminary user study that validates the usability of VizSpace.},
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