Demonstrating TwinSpin: A Virtual Ball in a VR Controller Enabling In-hand 3DoF Rotation

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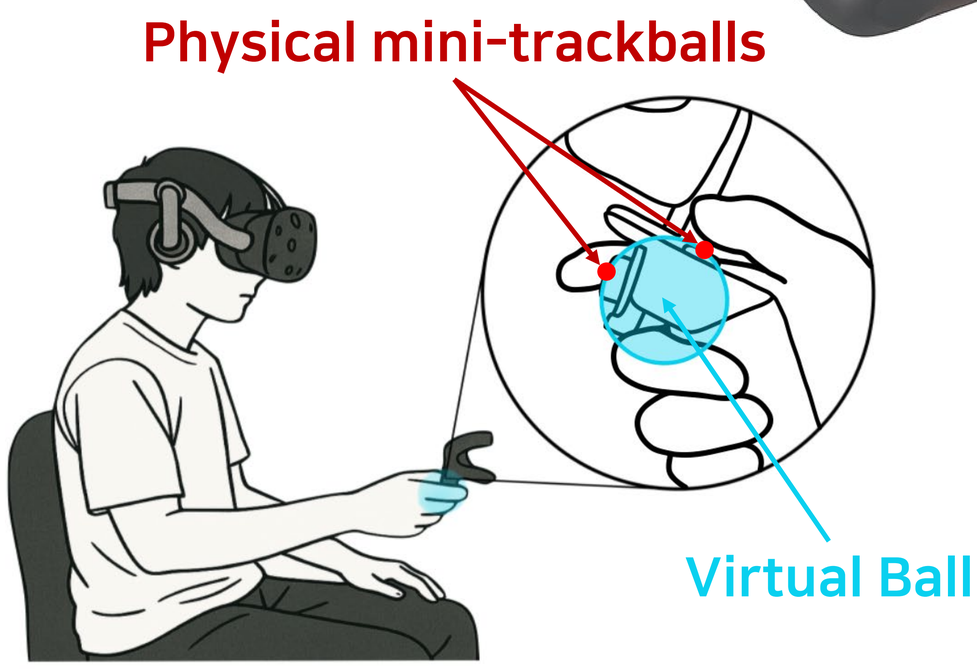
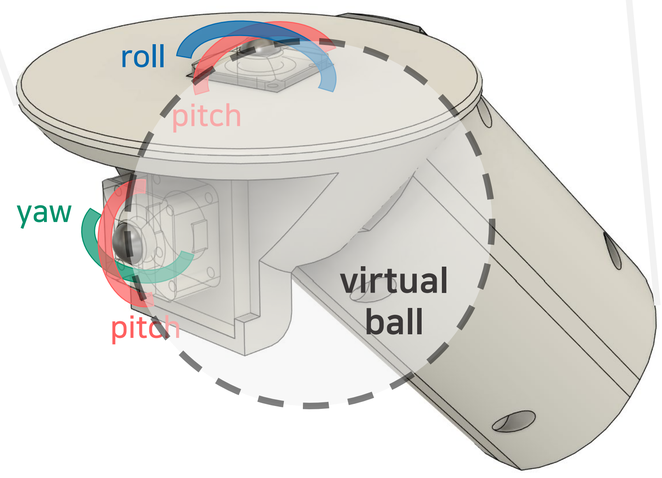
"Rolling a virtual ball in your hand"

In-hand rotation is a natural motor skill of humans, yet current VR controllers mainly rely on wrist and arm movements to rotate virtual objects, leading to significant arm motion and fatigue.
To address this, we propose **TwinSpin**.

Arm-based Rotation



TwinSpin (Finger-based Rotation)



In the Demo…

Puzzle Key Game (shout-out to *The Legend of Zelda: Skyward Sword*)

Step 1	**Grab** the *Puzzle Key* on the pedestal
Step 2	**Rotate** the *Puzzle Key* to fit the *Key Slot*
Step 3	**Insert** the *Puzzle Key* into the *Key Slot*
Step 4	**Repeat** for all four *Puzzle Keys*

TwinSpin is a VR controller employing **two embedded mini trackballs** manipulated by the thumb and index finger.