



PSY 4(6)99: Locomotion

11:58 AM

3:56 ESCORT THE PAYLOAD

0 3

5 PLAYER KILL STREAK!



HEALING +6

ELIMINATED **TYCO** 18



600 / 600



92%

BALATCORL FAIU
HOLTE TYCKO







What causes VR sickness?

N



head bobbing

body tilt

arm swinging

gait rotations

knee raises

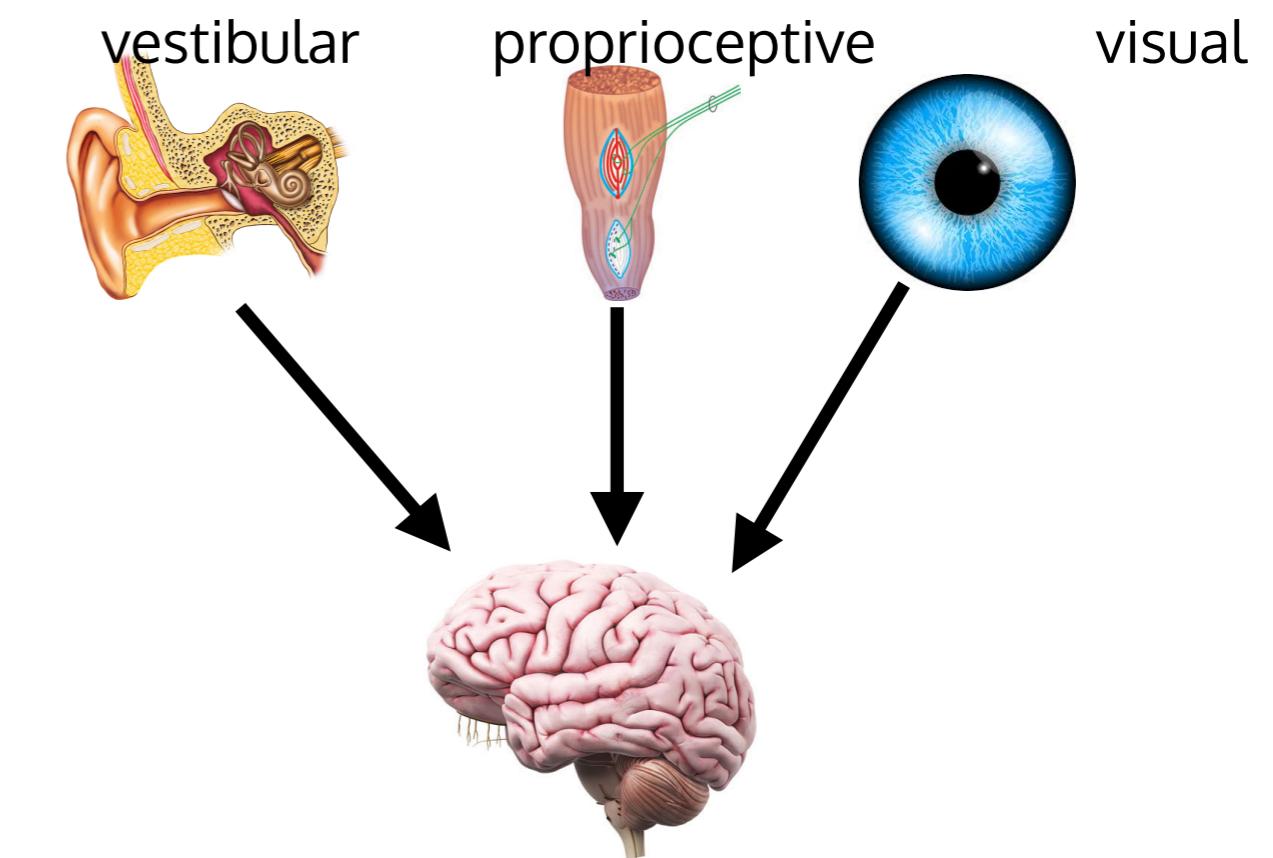


Proprioceptive

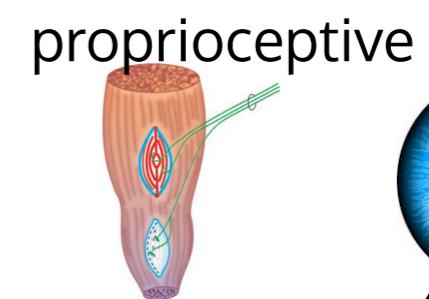
► WIP approximat

► WIP approximat

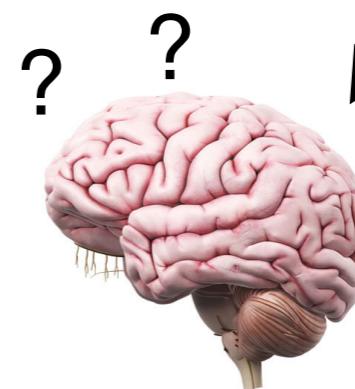
V



Sensory Agreement



visual



Sensory conflict



Locomotion problem

- ★ Minimizes VR Sickness
- ★ Offers a high presence
- ★ Low cost / minimize instrumentation

N

Treadmill



Our lab researches ALTs that

- ★ Minimizes VR Sickness
- ★ Integrates with natural walking
- ★ Offers a high presence
- ★ Low cost / minimize instrumentation

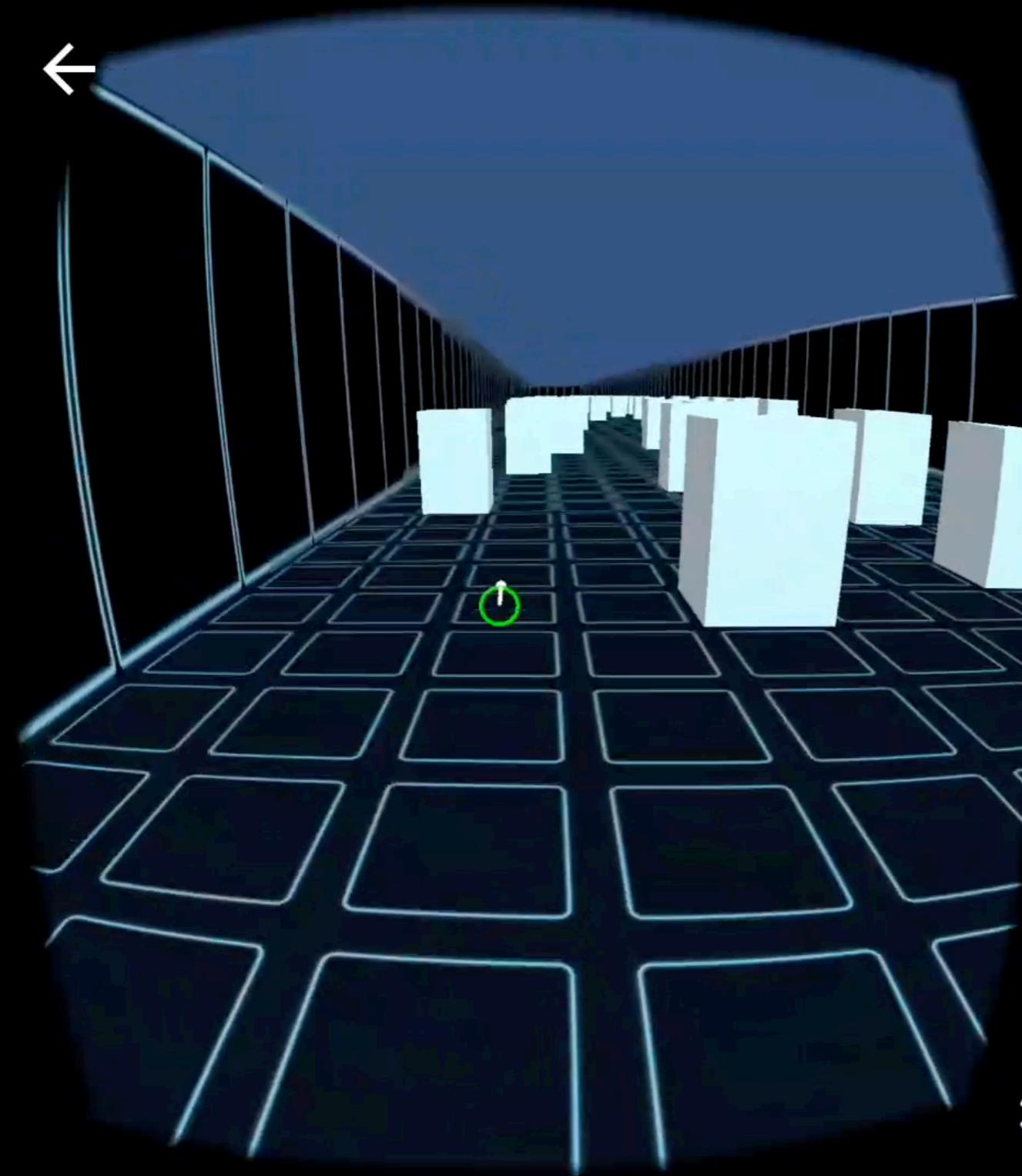
N

Virtual Locomotion: a Survey, Zayer et al

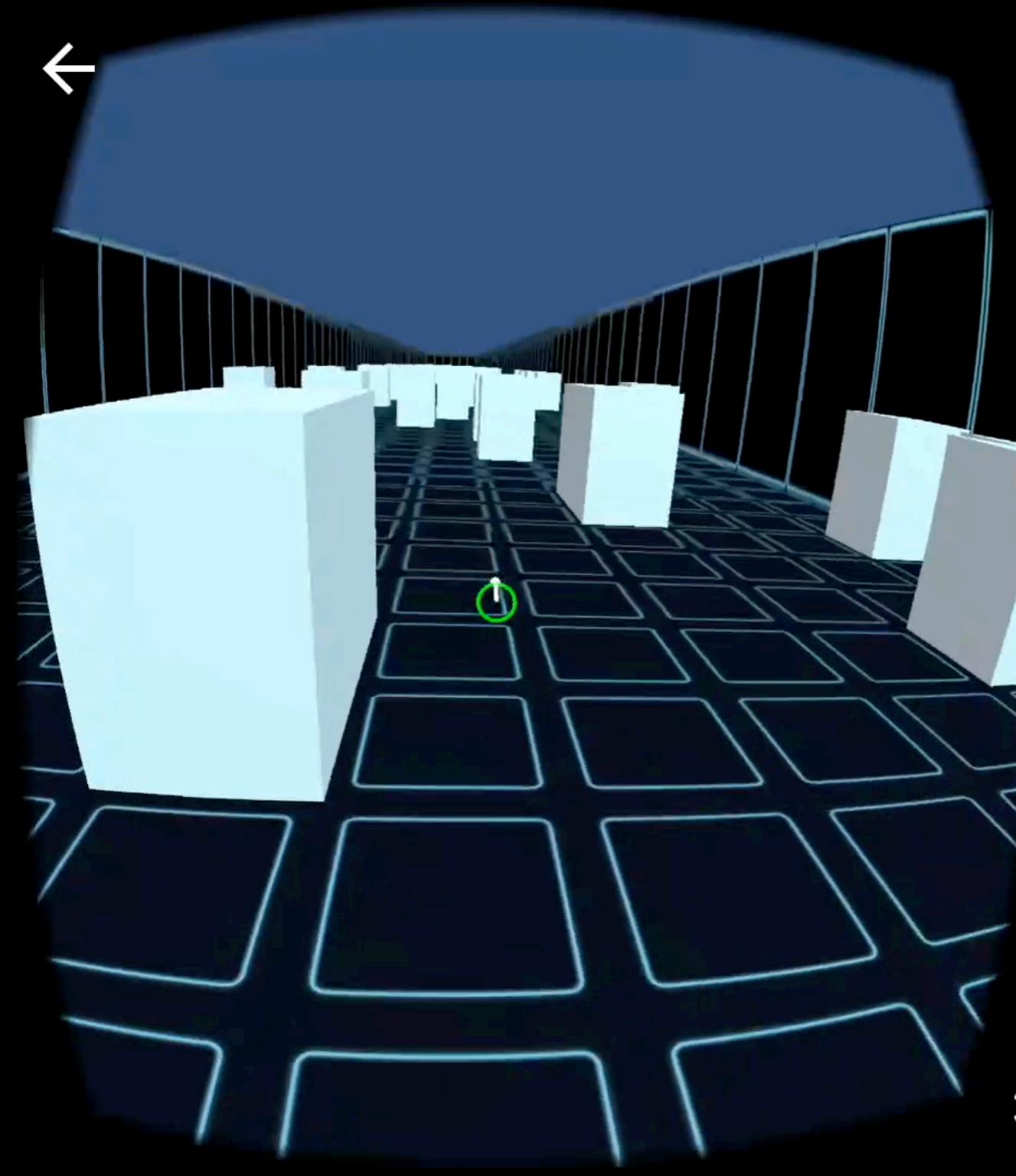
- ★ Walking based
 - ★ Full gait (treadmill)
 - ★ Partial gait (walking in place)
- ★ Steering based (head tilt)
- ★ Selection based (teleportation)
- ★ Manipulation based (drag)
N

X

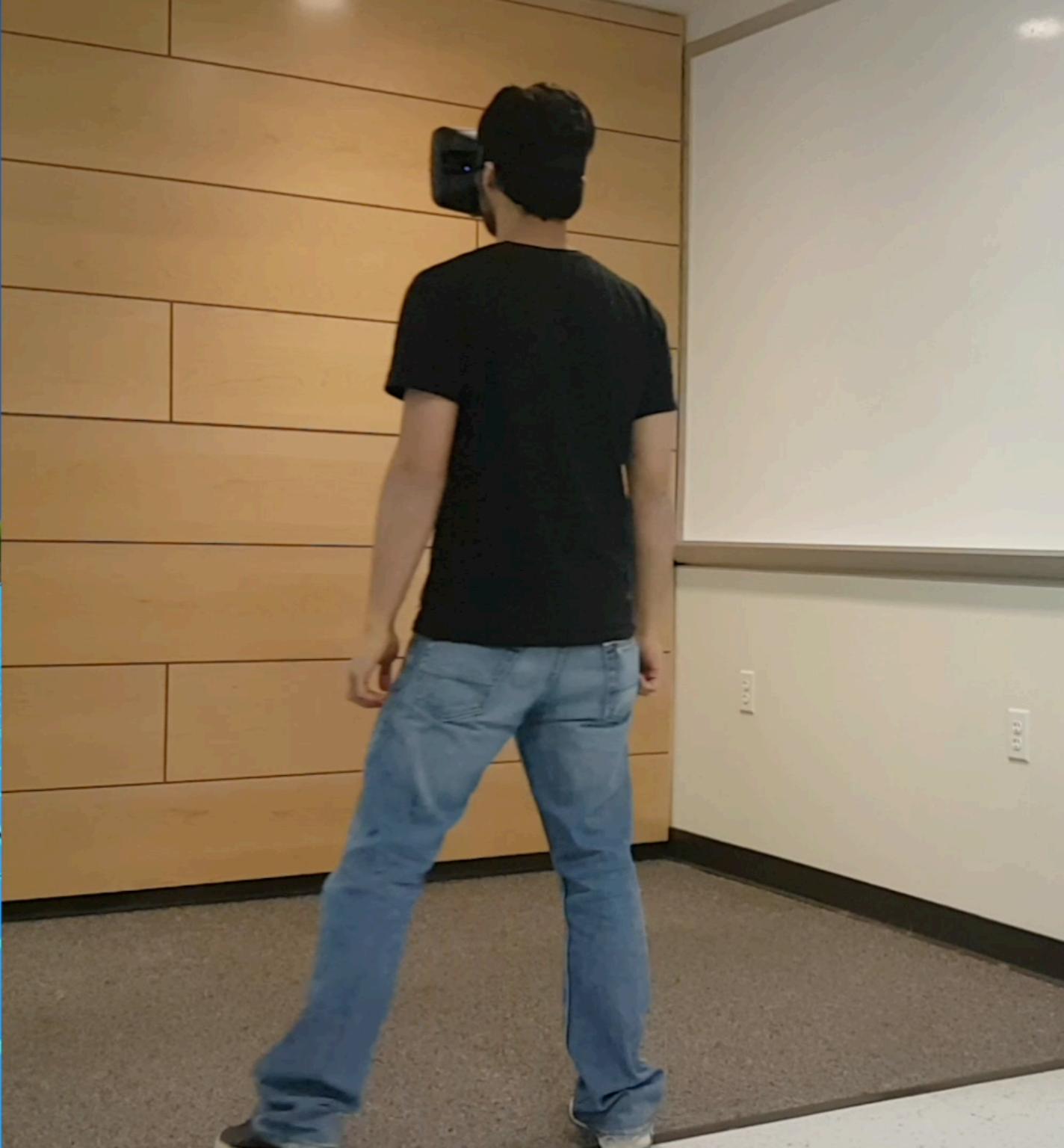
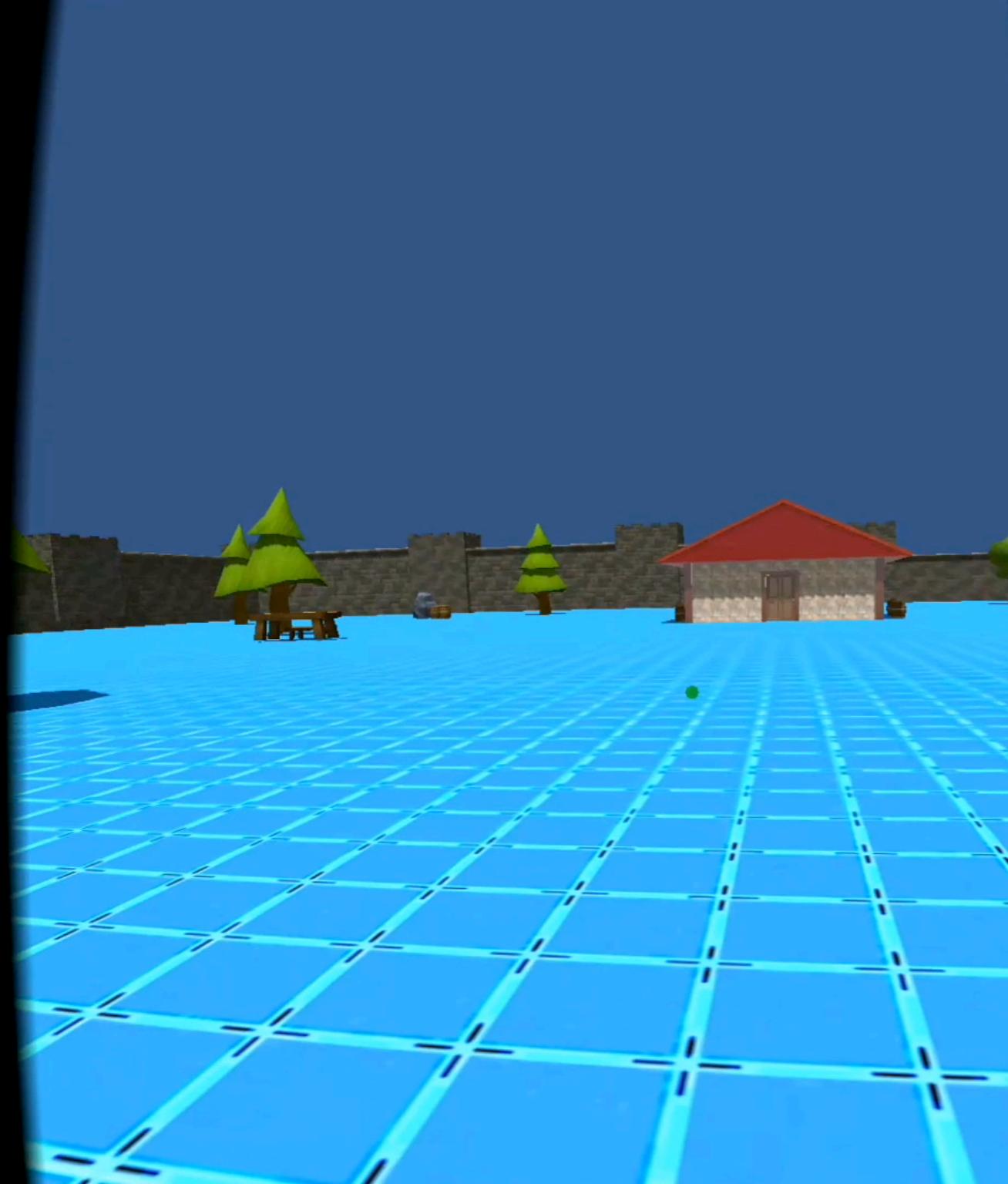




Tilt



WIP+T



Teleportation

N

Teleportation

- ★ Walking based locomotion not widely adopted.
- ★ Teleportation widely used as it does not cause VR sickness
- ★ Several problems with teleportation

N

DASH

VR TELEPORTATION
WITHOUT SPATIAL
DISORIENTATION

**POPEYE: HANDSFEE
TELEPORTATION USING HEAD
GAZE AND BLINK**

Redirected Teleportation

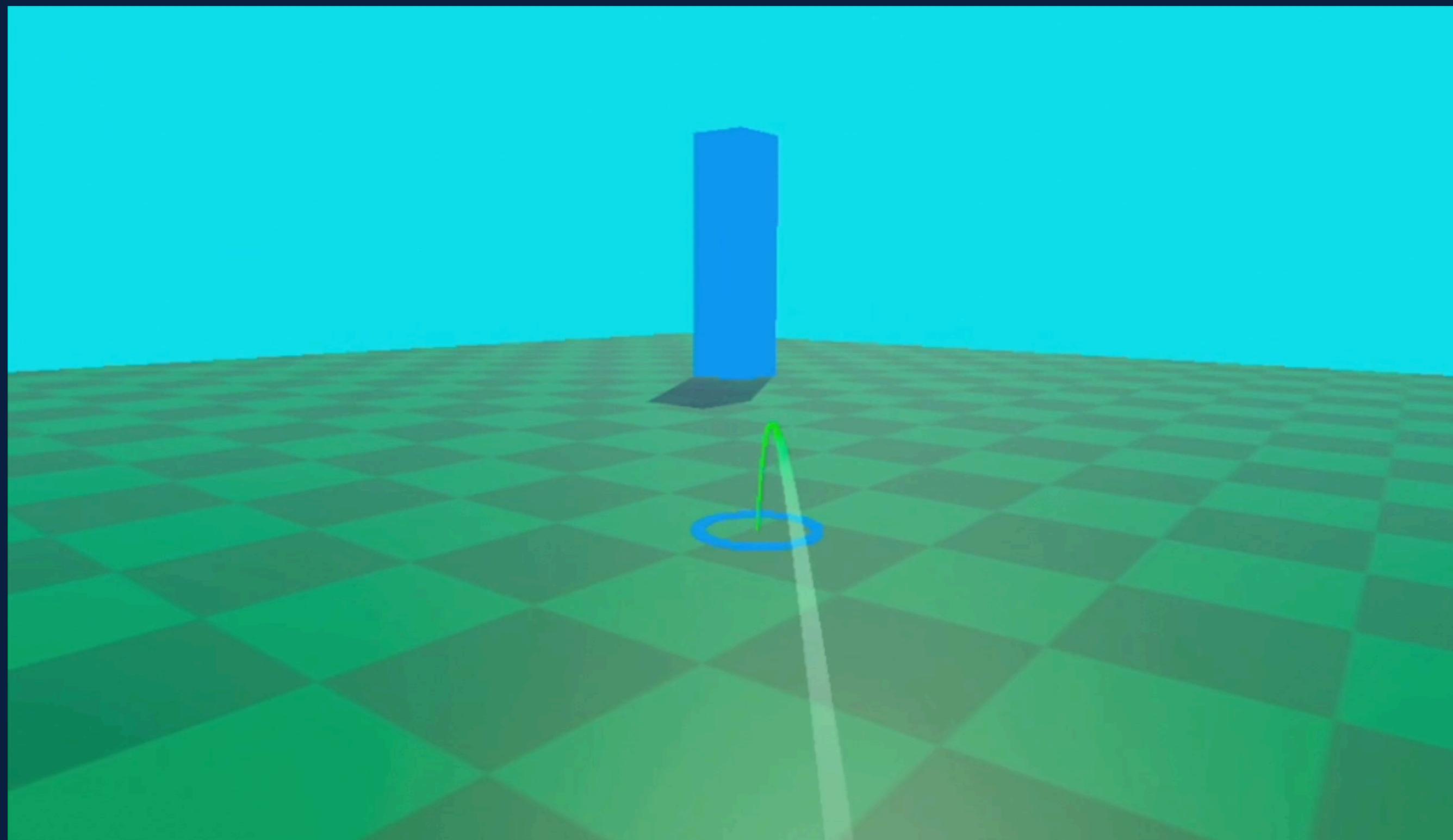
Increasing Natural Walking Usage in VR

Out-of-Body Locomotion: vectionless Navigation with a Continuous Avatar Representation

SEEN TOO MANY TIMES ALREADY!!!

Embodied Third-Person Locomotion
using a Single Camera

N



Other projects

N

Training

The Effect of a Foveated Field-of-View Restrictor on VR Sickness

Isayas Adhanom Nathan Navarro Griffin Paul MacNeilage Eelke Folmer



University of Nevada, Reno

N