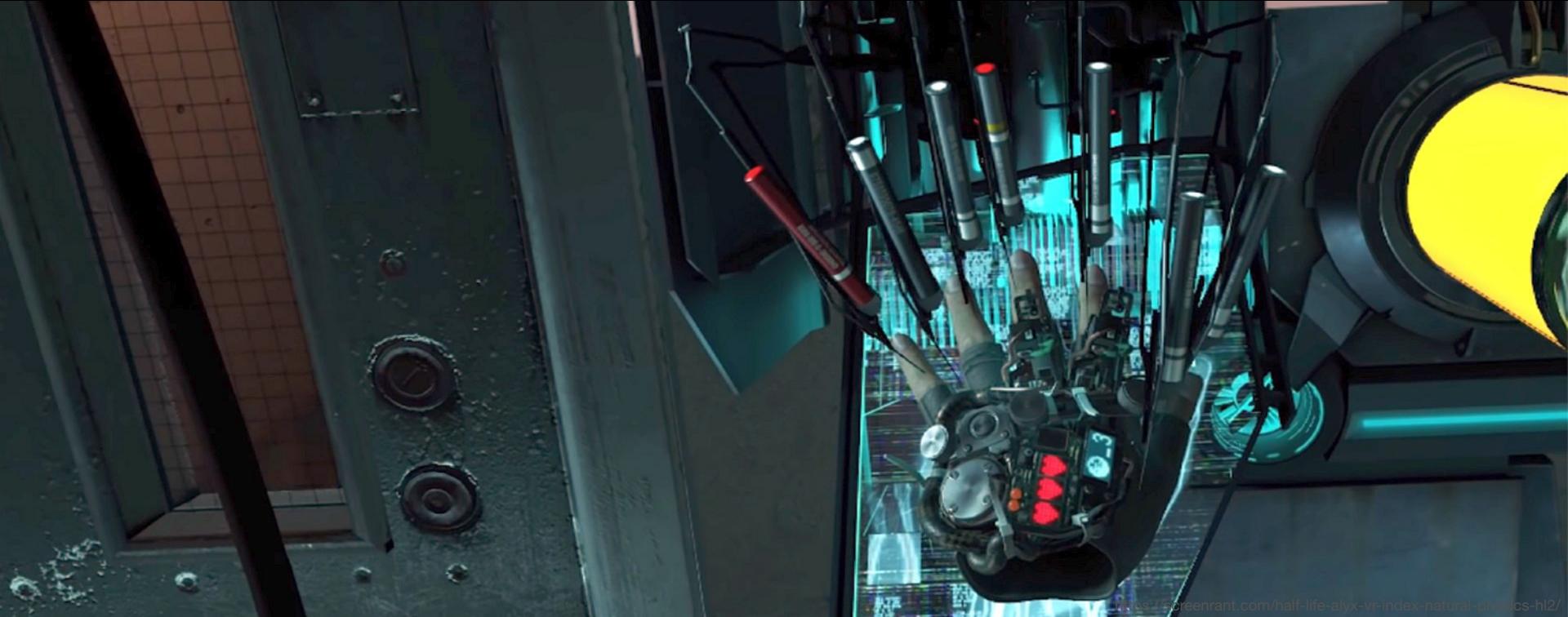


Virtual & Augmented Reality

WS 2025



<https://screenrant.com/half-life-alyx-vr-index-natural-physics-hl2/>

AR Interactions

BHT

INPUT TYPES

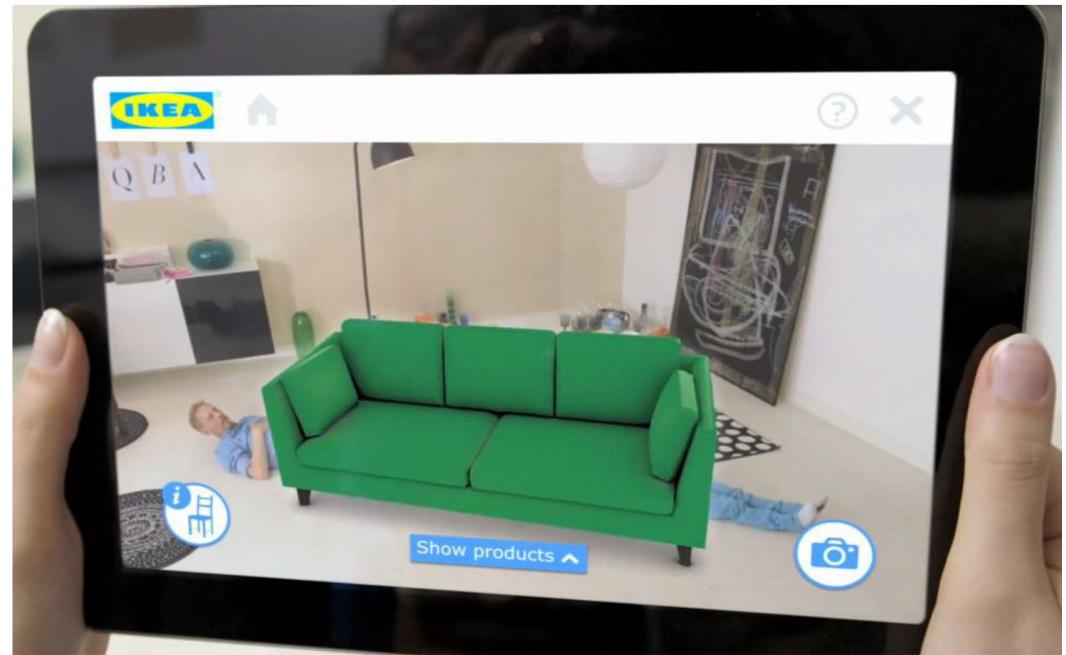
- HMD
 - Hand Tracking
 - Gestures
 - Eye Tracking
 - Device Movement (Virtual Camera)
 - Controller
- Spatial Technology Based
 - Marker Movement
 - 3D Object Movement
- Mobile
 - Touch Input (single + multi)
 - Device Movement (Virtual Camera)

OUTPUT TYPES

- Mobile
 - Visual
 - Audio
 - Haptics (in hand vibrations)
- HMD
 - (stereoscopic) Visual
 - (stereo) Audio
 - Haptics (passive touch / HMD vibrations)

AR INTERFACES AND INTERACTIONS

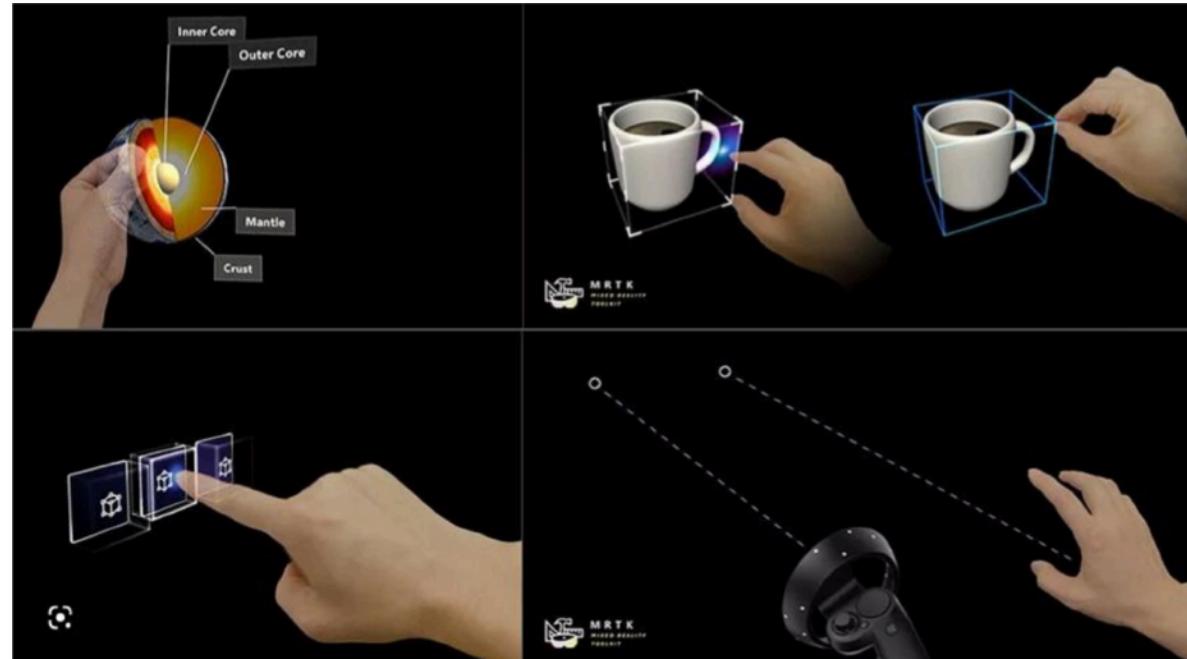
- Mobile
 - Classic 2D UI
 - World Space UI
 - 3D Raycasting (Touch)



AR INTERFACES AND INTERACTIONS

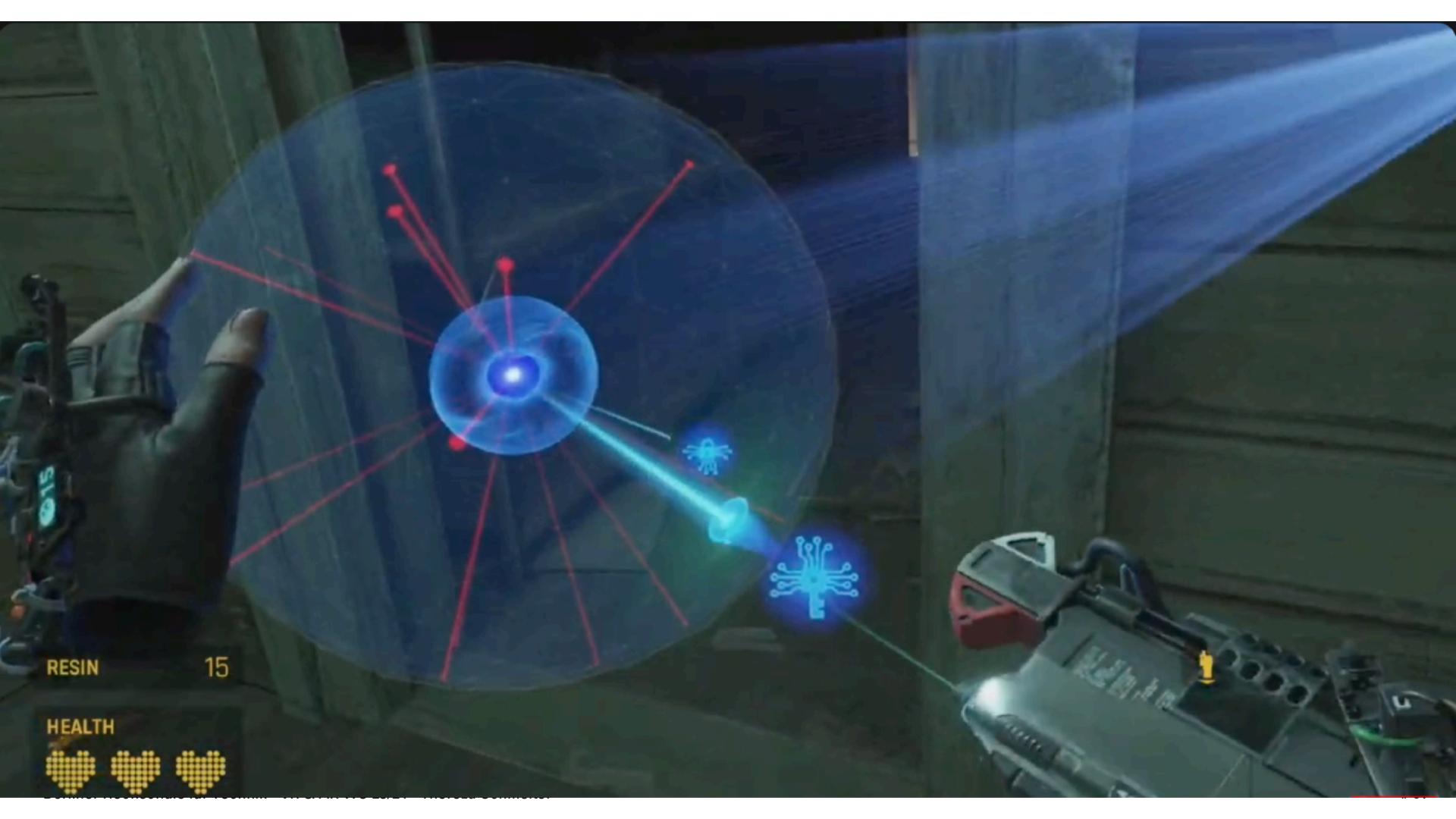
- HMD
 - World Space UIs (Floating UI)
 - Body-based UIs
 - Near Interaction (physics based) or far interactions (3D raycasting)

→ basically same concepts as with VR



HAND TRACKING INTERACTIONS

- Gesture Recognition – either predefined or custom
 - Needs to be learned
- Handtracking – Physical Interaction Implementation
 - Intuitive
 - Could require complex implementation – very finicky
 - How to avoid false input?

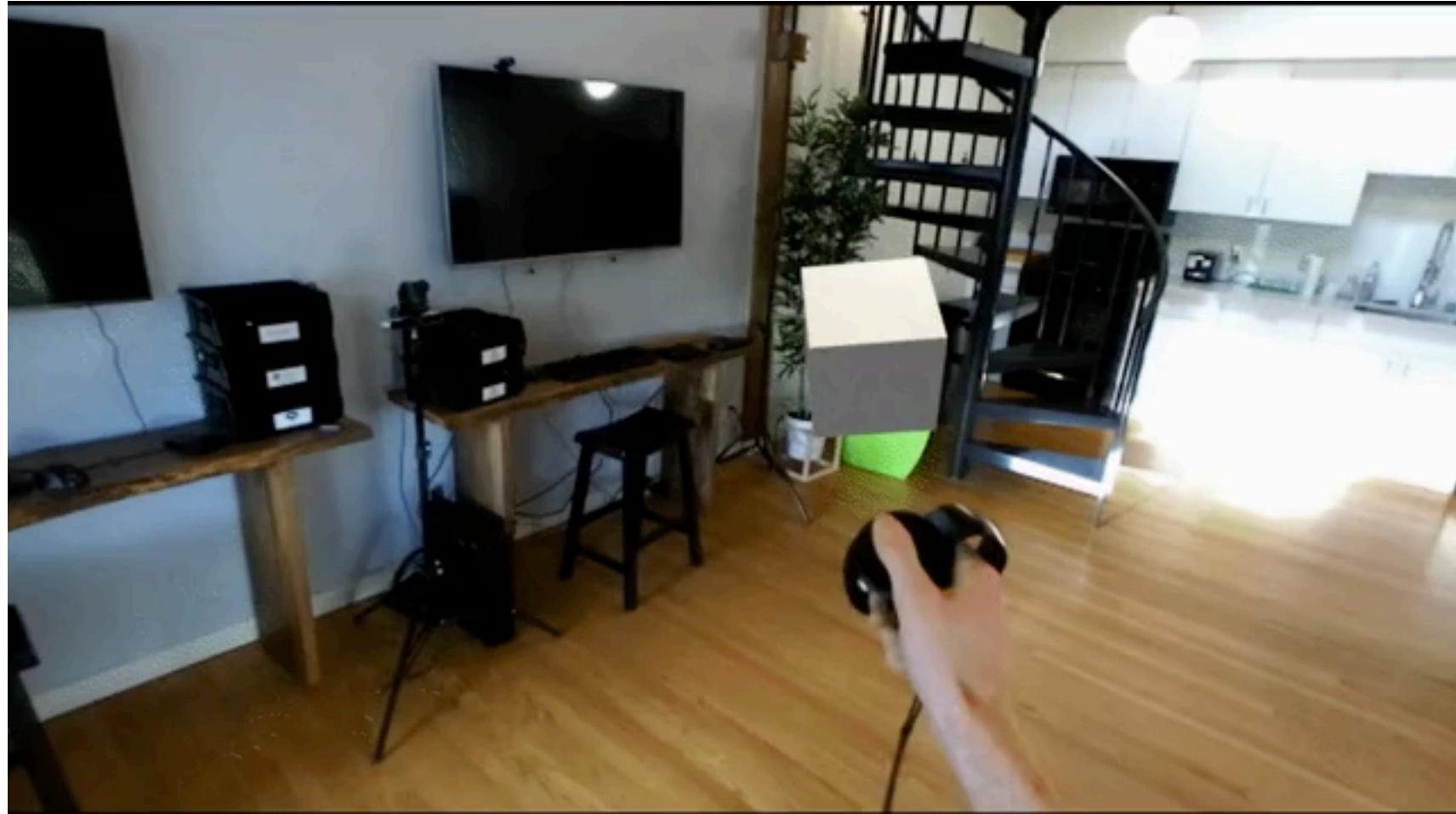


RESIN

15

HEALTH





<https://www.stereolabs.com/docs/unity/motion-controllers-passthrough>

EXAMPLES

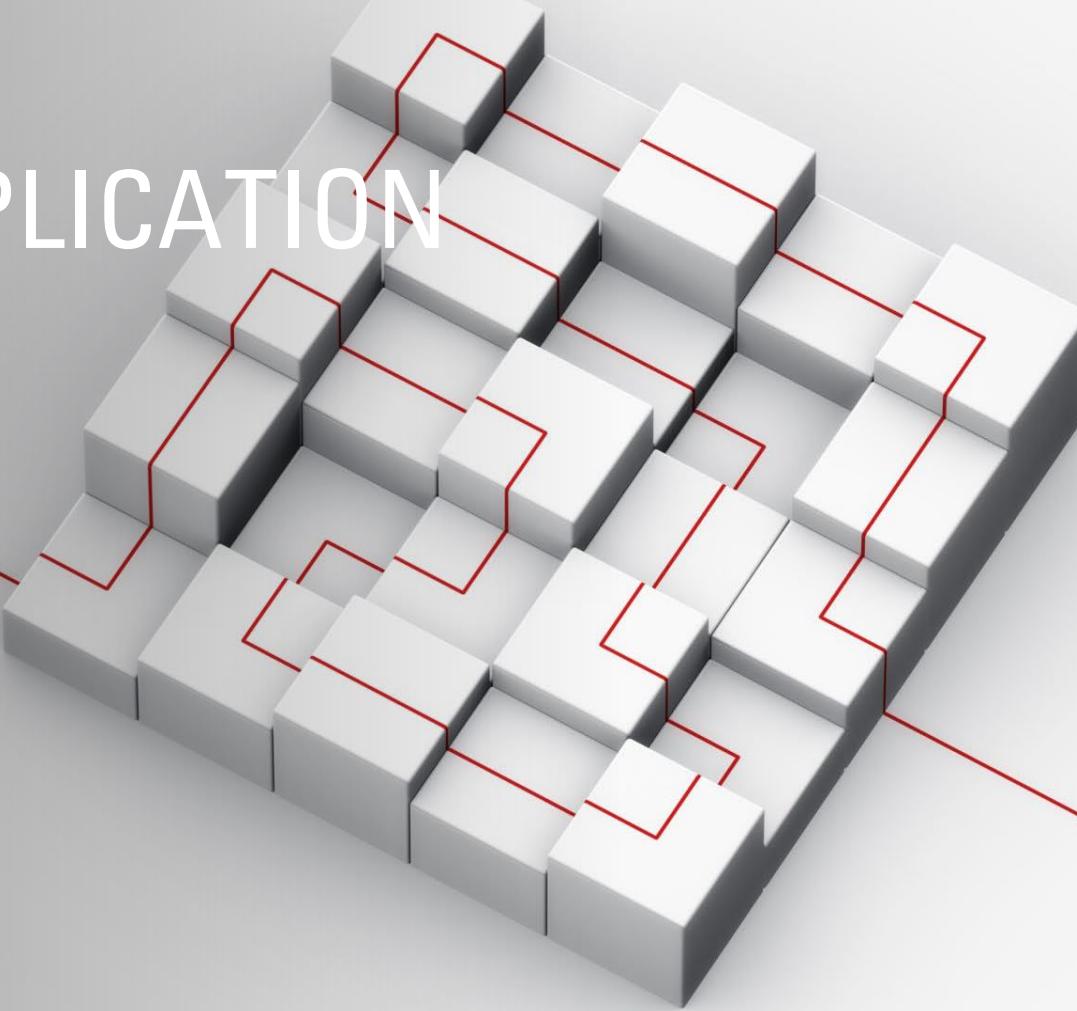
IKEA Place App

<https://www.youtube.com/shorts/Pm83Rh2WsMo>

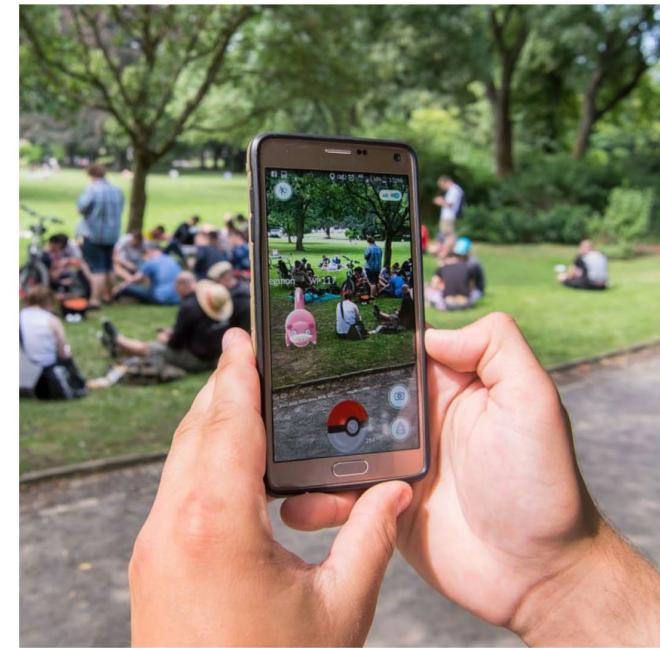
HoloLens2 Interactions live demo

<https://www.youtube.com/watch?v=uIHPPTPBgHk>

AR APPLICATION AREAS



ENTERTAINMENT



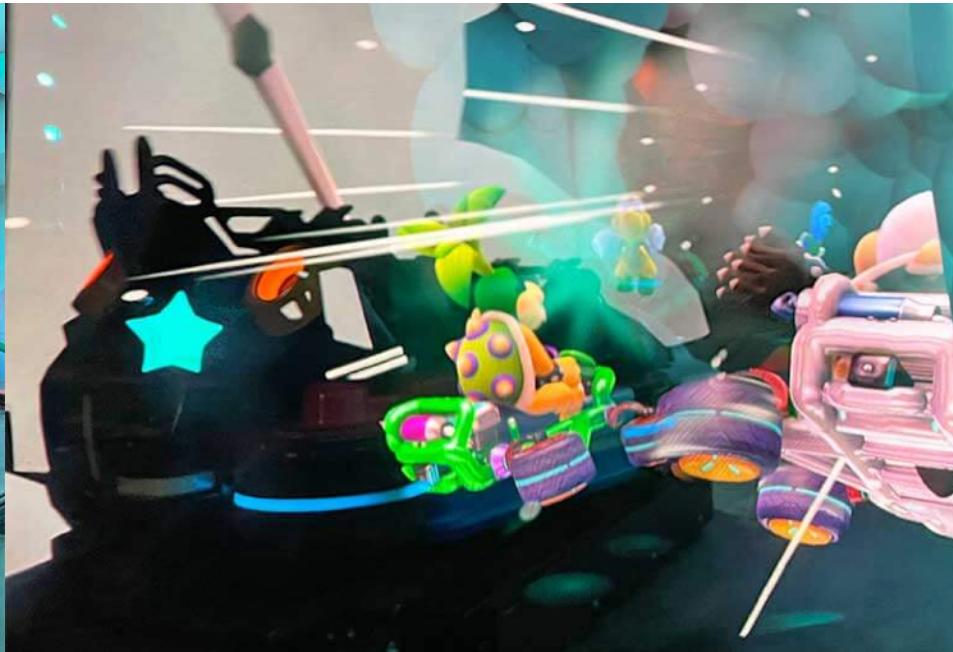
ENTERTAINMENT



ENTERTAINMENT



ENTERTAINMENT



COMMERCE / SOCIALS



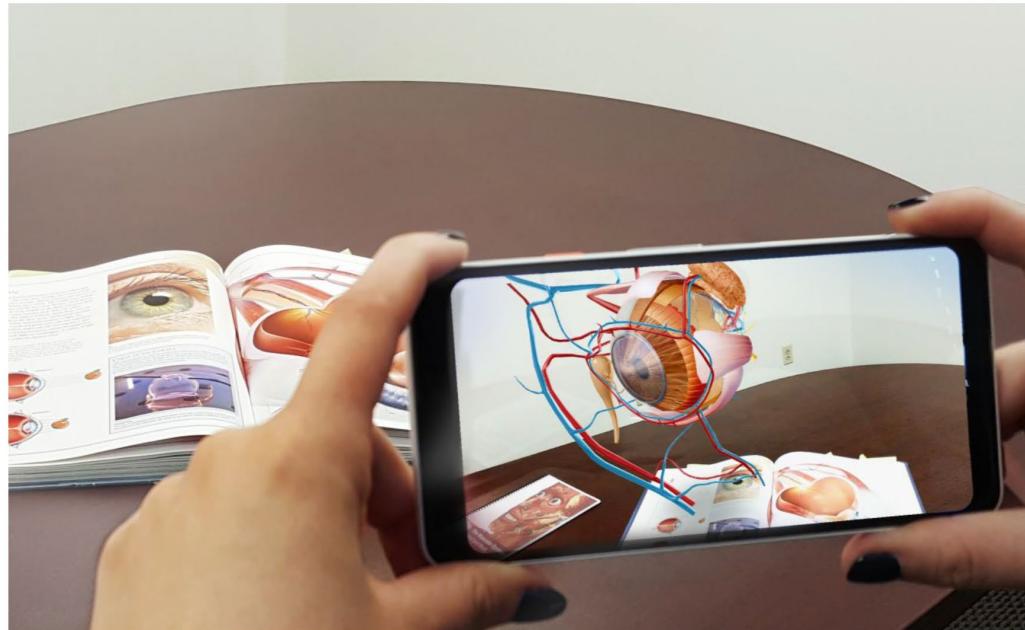
THERAPY



MEDICINE



EDUCATION



MILITARY



HISTORY

