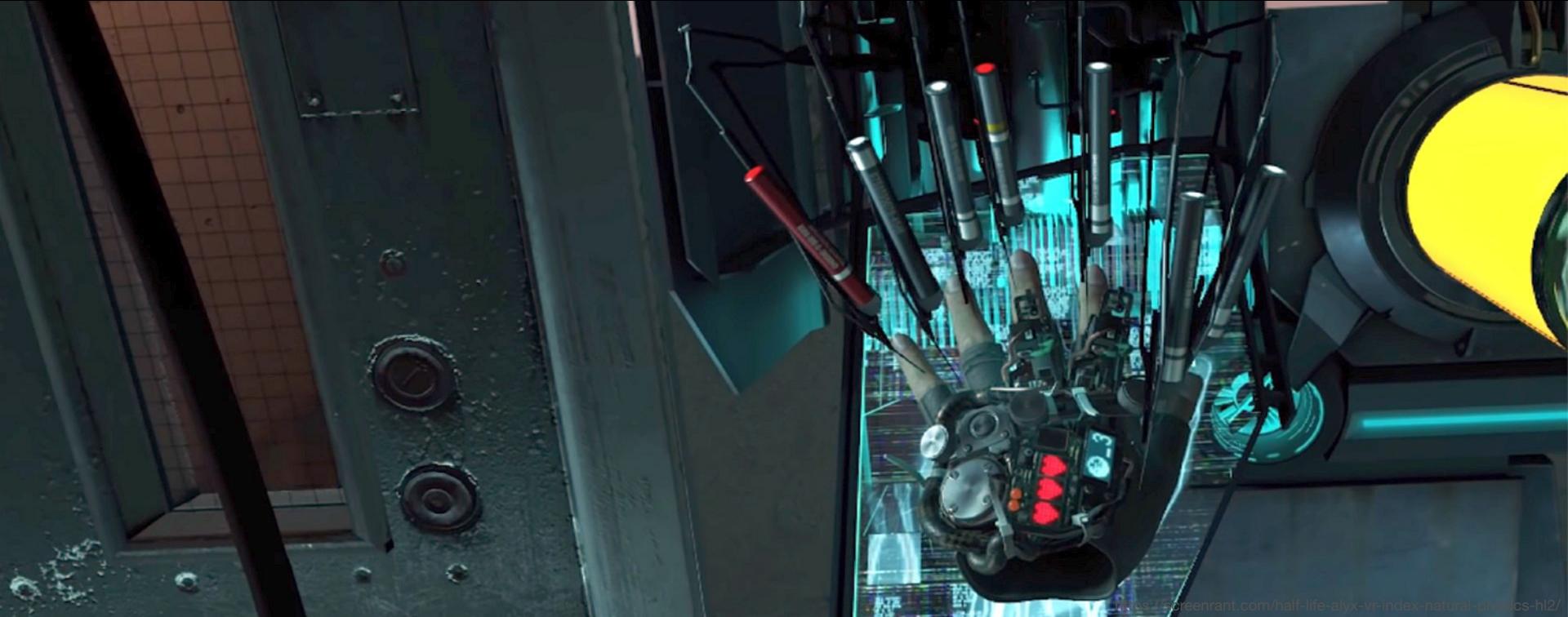


Virtual & Augmented Reality

WS 2025



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

VR Interfaces

BHT

USER INTERFACES IN VR

USER INTERFACE

- UI – User Interface
- Provides the the interface between human and maschine
- Visualization of information
- Allows interactions – button, slider, inventory...
- Provides feedback from the game
- Should be as intuitive as possible
 - are there “best practices”?
 - Has a similar game already solved the problem?

CLASSIC “SCREEN” UI

- Classic UI are shown on displays and depend on the platform and/or input device
 - Touch input – where can user's reach buttons
 - Mouse/Keyboard – shortcuts need to be easy to reach
- UI elements are most often positioned at the screen borders



UI STYLING

- UIs can/should be visually fitting to context



AVOID OVERFILLED UI



S R A

Go and see Theresa the mill
wench before noon.



B

Lt

Rt

Zoom

Marker

△

Quit Fullscreen

○

Exit

STORY MODE

Edd

SESSION

SESSION

FLORENCE

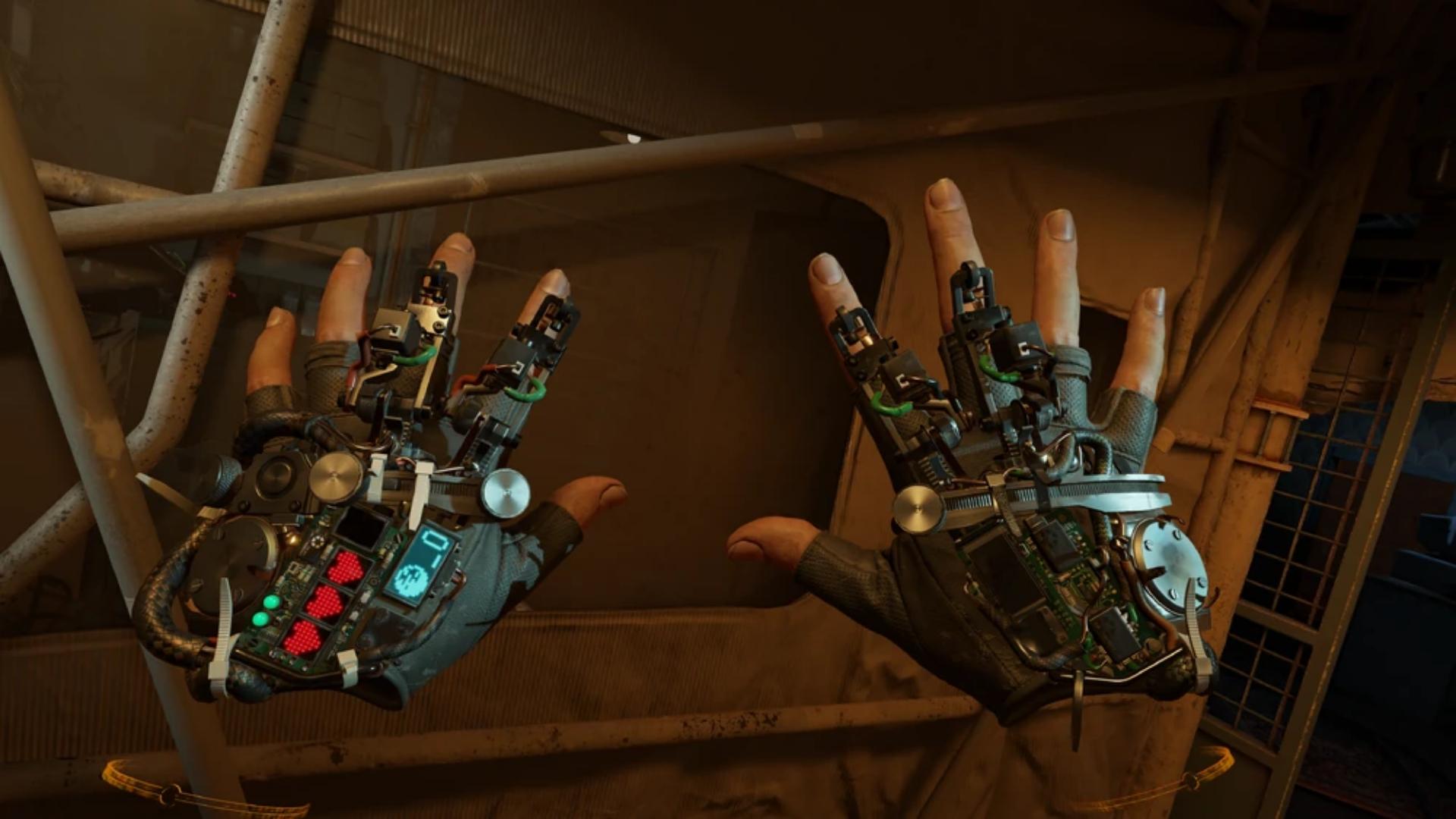


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LOAD

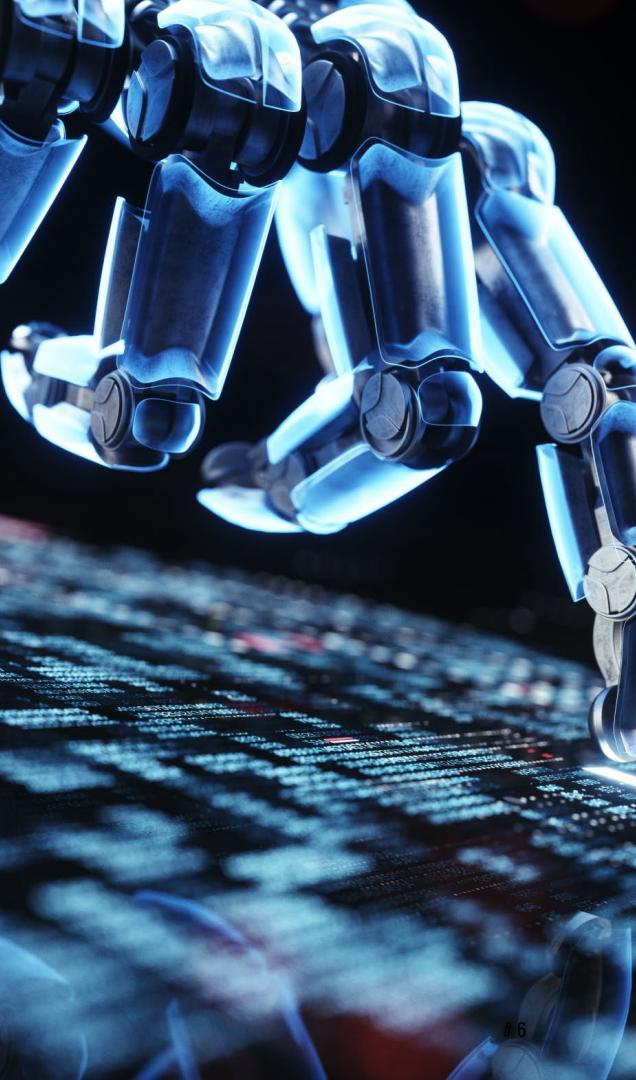
DELETE

BACK



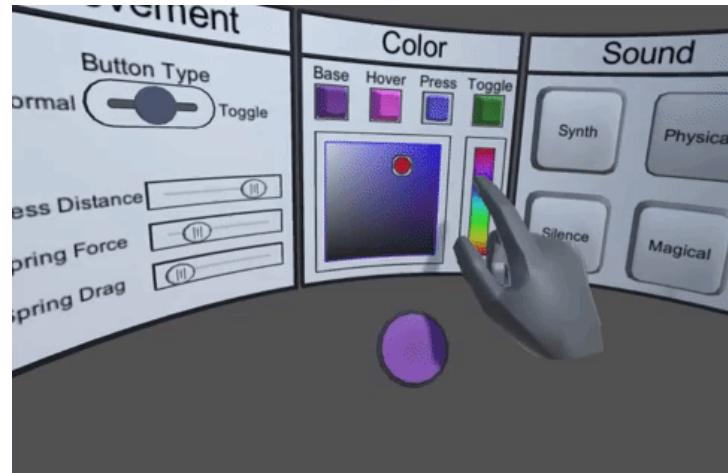
SCREEN VS VR INTERFACE

- Some best practices don't work in VR (of course some do)
- Icons: If you use Icons for Buttons or Information, you can use the same, players already learned their meaning
- Position of UI: because of the 360° View
- How do we activate interaction with the UI?
Pointing, Touching/Pressing Buttons,

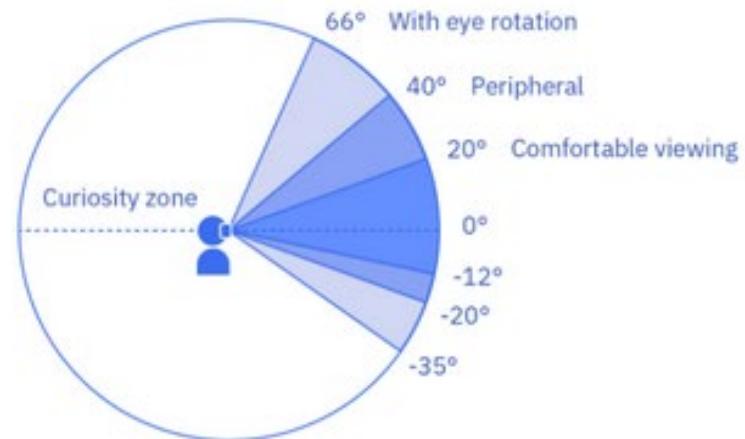
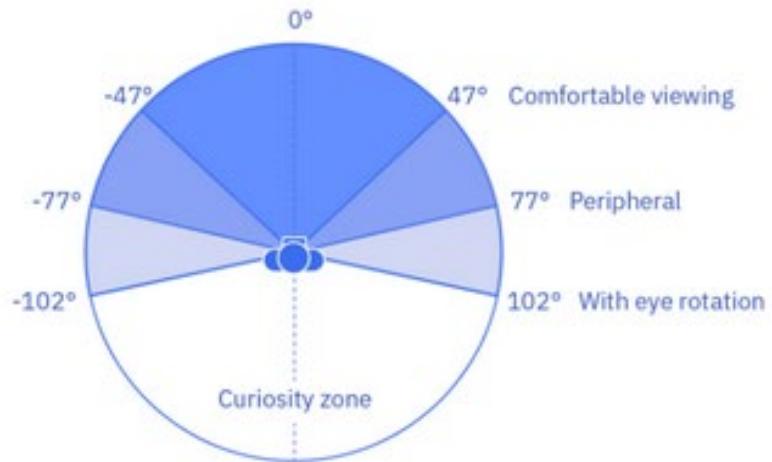


FLOATING INTERFACE

- 360° View
 - either move UI with user
 - or force user to look into one direction
- Screen Space UI should be avoided



VIEWING ANGLE – COMFORT POSITIONING



Comfortable viewing angles by IBM Design

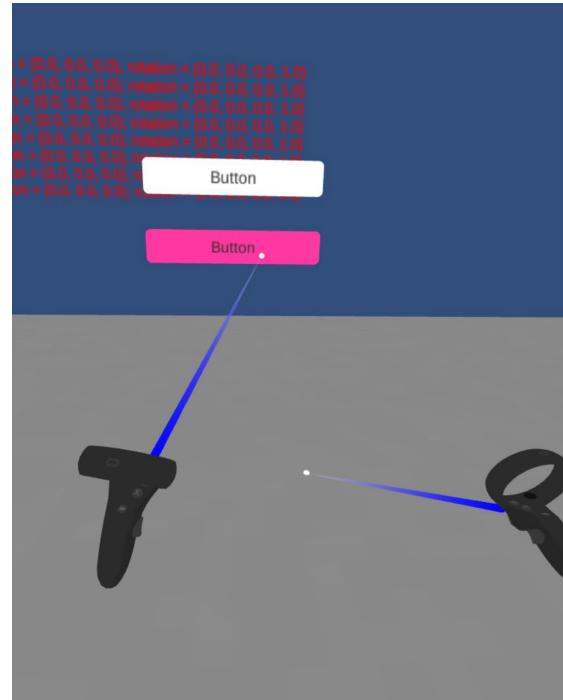
UI ATTACHED TO “ARM”

- UI ist „an der Seite“
- kann in die Comfort Zone geholt werden
- ist im VR-Raum eingebettet



UI INTERACTIONS

- We don't have a regular cursor
- Close interaction → allow interaction with hands/controller
- Far interaction → create a 3D space cursor
- Hand Tracking Pointing



INTERFACE “OBJECTS”

- Best solution for UI is to integrate it into the VR environment (if possible and sensible)
- Intuitive Controls necessary
- Overlap with Interaction Design



AFFORDANCE

Affordance: Affording, Aufforderung, Angebotscharakter

- Physical Characteristics of objects guide the user using the object
- Intuitive gestures should be supported by affordance
- The more specific the interaction, the more specific the affordance should appear

- Example: Buttons (Pressed, Hover, ... States)
- Example: The design of tea cups and teapot → suggest of respective functions



User Interfaces: Half Life Alyx

Affordance Design

- Türgriffe



User Interfaces: Half Life Alyx

Item Design

- Immersion vs. Erkennbarkeit
 - z.B. einfacher Outline-Effekt stört Immersion (außer mit SciFi-Erklärung)
- nützliche Gegenstände haben eigene, integrierte Beleuchtung
 - je unnützer, desto dunkler
 - sogar die Patronen haben eigenes Licht, dadurch sieht man auch von der Seite, wie voll ein Magazin noch ist



User Interfaces: Half Life Alyx

Sound Design

- Spieler können Dinge schütteln
- jede(!) Prop hat einen eigenen Schüttelsound



User Interfaces: Half Life Alyx

Presence / Embodiment Design

- Controller gibt haptisches Feedback
- drumherum schauen / hinhocken / durchgreifen nötig

