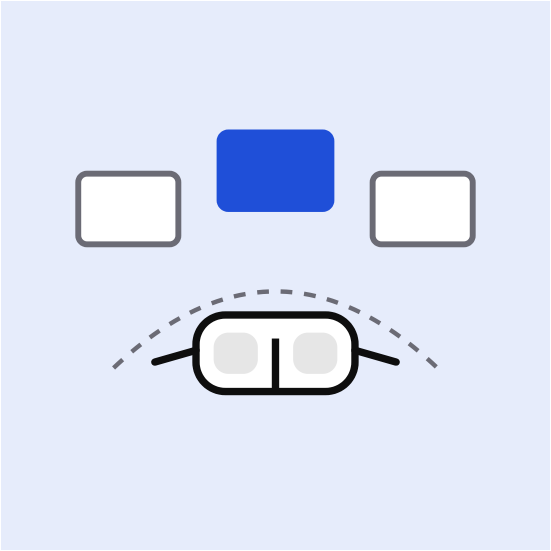
Specialty

XR design (extended reality)

Designs virtual, augmented and mixed reality experiences, in which digital content surrounds the person or blends with the real place. It is not the spatial design of buildings.



In Spanish
Diseño XR (realidad extendida)

Origin
Milgram and Kishino (1994); Slater and Wilbur (1997)

What problem it addresses

Without the frame of a screen, everything around the person can be interface, and poor design is tiring or causes motion sickness.

Principles

Comfort first
What matters stays within the field of view, and motion is smooth and predictable.

Near and far
You can touch within arm's reach or point from a distance, with targets larger than on a screen.

Something that stays still
A fixed element in the scene, or being able to see the real place, helps people stay oriented.

Several ways to use it
Hands, gaze, voice, controller or keyboard, depending on the person and the device.

Applications in design

✓ Use it like this
Save XR for what is costly or risky to rehearse in reality, or for seeing something at full scale before building it.

✗ Avoid
Accelerations, sudden stops or turns the person didn't cause: they make people sick.

👁 Don't fall for it
Test seated and standing, with people of different heights, and always offer a way to see the real place.

Connections

Builds on

- Cybersickness
- Reality–virtuality continuum
- Ergonomics and human factors
- Presence

Related to

- UI design
- Spatial design
- Haptic design
- Sound design

Authors and works

1994	**Paul Milgram and Fumio Kishino**	Arranged displays that mix the real and the virtual along a continuum running from a fully real environment to a fully virtual one, with mixed reality in between (augmented reality and augmented virtuality).
1997	**Mel Slater and Sylvia Wilbur**	Separated immersion, what the technology offers, from presence: the feeling of being in that place.
2020	**ISO**	The ISO 9241-394 standard sets requirements to reduce visually induced motion sickness in content and displays, including virtual reality headsets.

Sources

Original sources

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