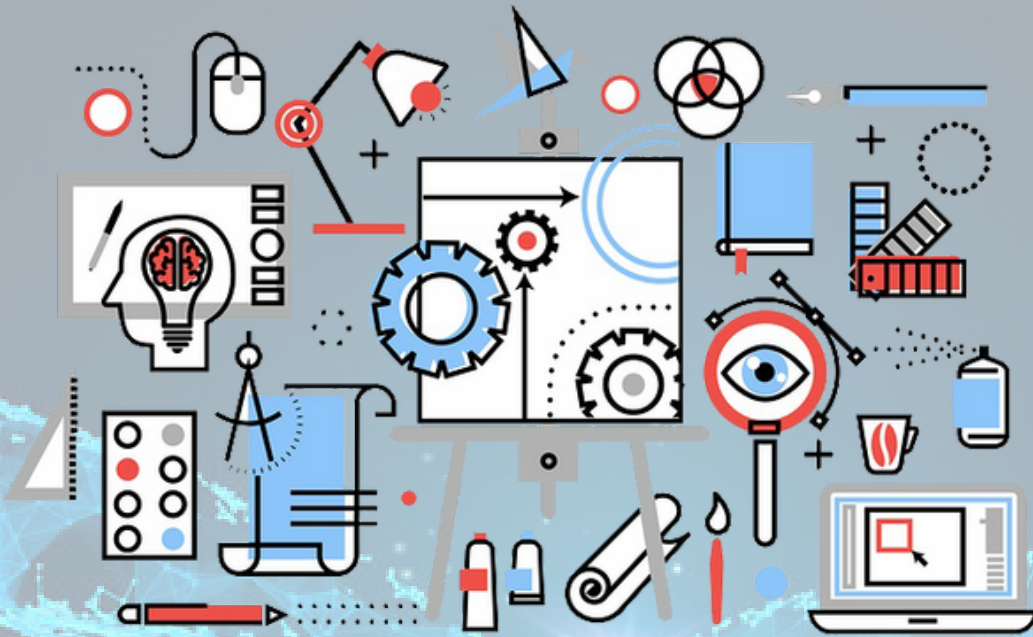




XRIG - IITM



VR TUTORIAL#4

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Input Systems in VR

Now that we have a basic idea of what VR is let us explore how we navigate the virtual world. We will be working with some of these in the near future (hopefully soon into the semester) but it is nice to know what all types are out there.

1]Controllers:

The one we are all familiar with. Controllers are used in a variety of ways both in VR and outside it (Think of Sony's PS5 controllers or Nintendo's various iconic ones for their consoles).

VR controllers are handheld devices that typically come in pairs, one for each hand. They are equipped with buttons, triggers, and joysticks, allowing users to perform various actions in the virtual world, such as grabbing objects, pointing, and navigating menus.



2]Motion Tracking:

Motion tracking systems use sensors or cameras to track the user's real-time movements.

This can be achieved through external devices like cameras placed in the room (e.g., HTC Vive's Lighthouse system) or inside-out tracking, where the sensors are integrated into the VR headset (e.g., Oculus Quest). Motion tracking enables users to physically move within the virtual space and interact with objects using their body movements.

3]Gesture Controls

Some VR systems utilize gesture recognition technology to interpret the user's hand movements and gestures. Cameras or sensors capture the user's hand movements and translate them into corresponding actions in the virtual world. This approach allows for more natural and intuitive interactions without needing handheld controllers.

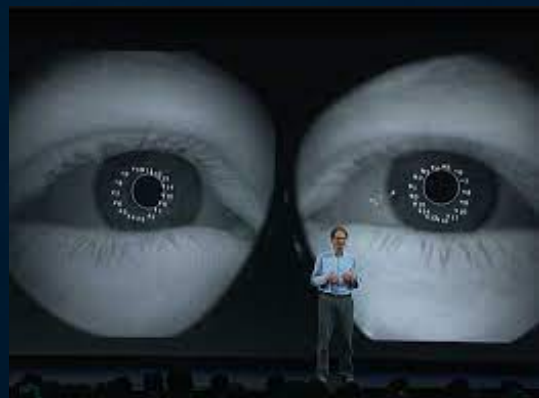


4]Voice Recognition:

Voice recognition enables users to control and interact with the virtual environment using voice commands. The VR system listens for specific keywords or phrases and performs the corresponding actions. This input method can be useful for tasks like issuing verbal commands to virtual assistants or engaging in voice chat with other users in multiplayer experiences.

5]Eye Tracking:

Eye tracking technology monitors the user's eye movements and gaze direction. By tracking where the user is looking, the VR system can provide more realistic interactions and improve graphics rendering by dynamically adjusting the level of detail in the user's field of view. Eye tracking can also be used for menu selection, object interaction, or as an additional input modality alongside other methods.



6]Haptic Feedback:

Haptic feedback systems provide users with a sense of touch in virtual reality. This can be achieved through specialized gloves, controllers, or vests that use vibrations, pressure, or other tactile sensations to simulate the feeling of touching or interacting with virtual objects. Haptic feedback enhances immersion and allows for more realistic interactions.

