

Virtual Reality

Definition

Virtual reality is where a 3D space is made by a computer. The user is then effectively put into that 3D space by wearing some sort of technology, usually a headset, which displays that space and their position within it.

The headset uses two camera feeds, one for the left eye and one for the right, in an attempt to mimic the human field of vision. The user can then walk around the room and possibly interact with it. This can require handsets or gloves to monitor the user's hand position.

Currently there are many game-related virtual reality projects, such as the Oculus Rift, HTC Vive and PlayStation VR.

Virtual reality has been used in several training programmes, including flight simulators to give pilots experience in dealing with certain scenarios and in demonstrating military situations.

Virtual reality has many applications:

- **Education** (for example, looking inside an ancient building as part of a history lesson)
- **Healthcare** (for example, as a diagnostic tool)
- **Entertainment** (for example, games where gloves, goggles or helmets are worn to give realism to the scenario and even to give images or sound to make it seem very real)
- **Fashion** (for example, to do fashion shows before doing the real thing to see the clothes on people, check out the venue and so on)
- **Heritage** (for example, showing monuments such as Stonehenge)
- **Business** (for example, training courses and role-playing scenarios for staff)
- **Real estate** (for example, allowing people to 'look around' houses that are for sale)
- **Engineering** (for example, seeing how new designs will look)
- **Sport** (for example, a golfer trying to improve their swing can use this technology and get feedback to improve their game)
- **Media** (for example, special effects in films such as *The Matrix*)
- **Scientific visualization** (for example, looking at molecular structures in chemistry).

Virtual reality does pose some issues:

- Achieving calibration between the camera and user has not yet been perfected. Many users have mentioned issues with motion sickness because of the difference between what they feel and what they can actually see.

- Virtual reality can also cause users to injure themselves if they are not in a large, empty space, as they could easily walk into objects and hurt themselves.
- In some cases, users have experienced seizures because of virtual reality, so epileptic users must be very cautious.