What is mixed reality?

Mixed reality is the next wave in computing following mainframes, PCs, and smartphones. Mixed reality is going mainstream for consumers and businesses. It liberates us from screen-bound experiences by offering instinctual interactions with data in our living spaces and with our friends. Online explorers, numbering in the hundreds of millions around the world, have experienced mixed reality through their handheld devices. Mobile AR offers the most mainstream mixed reality solutions today on social media. People may not even realize that the AR filters they use on Instagram are mixed reality experiences. Windows Mixed Reality takes all these user experiences to the next level with a combination of truly stunning holographic representations of people and high fidelity holographic 3D models and the real world around them.

Mixed reality is a blend of physical and digital worlds, unlocking natural and intuitive 3D human, computer, and environmental interactions. This new reality is based on advancements in computer vision, graphical processing, display technologies, input systems, and cloud computing. The term "mixed reality" was introduced in a 1994 paper by Paul Milgram and Fumio Kishino, "A Taxonomy of mixed reality Visual Displays." Their paper explored the concept of a *virtuality continuum* and the taxonomy of visual displays. Since then, the application of mixed reality has gone beyond displays to include:

Environmental understanding: spatial mapping and anchors.

Human understanding: hand-tracking, eye-tracking, and speech input.

Spatial sound.

Locations and positioning in both physical and virtual spaces.

Collaboration on 3D assets in mixed reality spaces.

-Prof. Kushal Suvarna