

Abstract

Augmented Reality is a technique that allows users to overlap digital information with their physical world. The Augmented Reality (AR) displays have an exceptional characteristic from the Human-Computer Interaction (HCI) perspective. Due to its increasing popularity and application in diverse domains, increasing user-friendliness and AR usage are critical. Context-aware is one approach since an AR application can adapt to the user, environment, needs and enhance ergonomic principles and functionality. This paper proposes the Intelligent Contextaware Augmented Reality Model (ICAARM) for Human-Computer Interaction systems. This study explores and reduces interaction uncertainty by semantically modeling user-specific interaction with context, allowing personalised interaction. Sensory information is captured from an AR device to understand user interactions and context. These depictions carry semantics to Augmented Reality applications about the user's intention to interact with a specific device affordance. Thus, this study describes personalised gesture interaction in VR/AR applications for immersive/intelligent environments

Virtual Reality involves providing sensory input to a user that replicates being present in a real or imagined environment. Most commonly the sensory input is limited to sight and sound, but it can also include other senses such as touch. Augmented Reality, on the other hand, involves a live direct or indirect experience of an environment, overlaid with computer-generated sensory input usually in the form of graphics, video and/or sound.

Applications of VR and AR include (but are not limited to): education – enhanced learning experiences; medical and healthcare – treatments for PTSD, phantom pain, anxieties and phobias, autism in children; support for complex tasks such as surgery, equipment assembly, or maintenance and repair by adding relevant information to the field of view of the user; training for medical personnel, law enforcement, military, and emergency responders; architectural design – experiencing a virtual building before it's built; engineering and design; telepresence – for meetings and remote workers; market research – experiencing a virtual product that doesn't yet exist; entertainment – cinema, music, and sports; tourism; product advertising and promotion; computer games.