Abstract

It is said that augmented reality (AR) is expected to become a $72.7 billion dollar market in 2024 [1]. As augmented reality has become more advanced, companies have been continuously obsessing over using this technology to grab the attention of consumers with methods from face filters to billboard pieces that break reality. AR has only become more popular as mobile phones have progressed to be able to handle the technology, and companies have made it their goal to engage consumers with this new attention-grabbing toy. Immersion and sense of presence is constantly mentioned in regards to virtual reality (VR), but how does one determine a user's sense of presence when dealing with AR? With a focus on user interface (UI) design in mobile AR applications, this paper will look into the question "Can a user interface design have a significant impact on a user's sense of presence in an AR handheld application?".

Looking at user movement while using these handheld AR applications, the aim is to lay out the groundwork for a study testing different interaction methods (or UI) as well as collect data regarding the user's sense of presence throughout. Will these small changes in interaction encourage the user to be more engaged in the experience? Will these changes make the virtual objects in the scene more believable to the user?

Keywords: augmented reality, user interface, design, interaction, presence