

# User Experience of Mobile Augmented Reality: A Review

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**Abstract** - Recently, augmented reality technologies are debuting to the mainstream markets. When Augmented Reality (AR) experience is delivered on mobile devices it is termed as mobile augmented reality (MAR). Currently, smartphones are still the dominant computing platform for providing mobile augmented reality (MAR) experience to users [4]. Though attentions are gathered on usability and conventions for this technology, the user experience cannot be ignored [1]. It will be important to approach the technology with friendlier and more user-centered focus to bring it out of research labs and into people's life. This article is an effort to summarize the current research regarding user experience of MAR. In this paper, we will introduce design exploration constructs inspired from a method that is commonly used in the field of the industrial UX to guide designers of MAR application to explore different aspects of user experience.



Figure -1: Pokemon Go [8]

**Key Words:** user experience, mobile augmented reality, design

## 1. INTRODUCTION

Augmented Reality (AR) was incepted in early 90's, but it was until recent years that AR technologies are debuting to the mainstream markets [4]. Once real and virtual world is combined through AR it becomes part of the mixed reality presented in a single display as defined in "Virtuality Continuum"[5]. Recently, AR experiences have started to deliver on mobile phones. With maturing technologies and availability of the sensor-enriched device, it will be more commonly available in the hands of the public and become a technology that is not solely used by experts.

The availability of different software libraries that support the development of AR applications and the increase in computational capacity have made mobile devices an important platform. As a result, many AR applications can be found in major mobile app stores, most of them for entertainment. A great example is the well-known AR game Pokemon Go allows millions of people roaming around the physical world to capture virtual characters as shown in figure-1, reported revenue streams of \$10 million per day alone [7]. Snapchat, which is an app worth \$1 billion estimated, also enables AR feature by using facial-recognition technology to enable users to enhance the image with computer-generated animation.

User experience is considered a subjective and universal concept as it defines the experience of technological product or service. User experience is defined by ISO standard as "A person's insight and response that is an outcome of usage or predicted usage of a system, product or service". User experience is important factor for interaction of product and services. And Existing System should be satisfy the UX. As markets are becoming more saturated, user experience is turning out to be a dominant competitive quality factor of interactive products and services.

It is becoming increasingly important to understand the quality UX as a field of study. The purpose of this review is to present an overview of the current knowledge about UX in context of MAR.

## 2. METHODOLOGY

Our selection methodology to Conducting one Test. We conducted the test of two person one person is older and one person is younger and given the existing MAR device to use.

In the above test the UX of the user is mainly based on the how the content on the mobile is displayed. If the content is in text format then the UX is difficult for older person and is able to use the UX if they provide the animation to show the instruction to use the device. Similarly if the UX is used with the text based as well as the animation based the young person is able to used it. This may be due to the young person might used the similar devices frequently [6].

### 3. USER EXPERIENCE OF MAR APPLICATIONS

#### a) Augmented Reality in 3D viewers:

Augment allows its users to see their products in a real-life environment. This app can be used for Real Estate Buyers to expose the property. And Drivers to find the direction and find the parking spot. Campers to find where to camp and sit and Architects for visualizing the solar angle [3].

#### b) Augmented Reality Games:

MAR games are most common and most demanding and the games such as Pokemon Go the user to catch virtual Pokémon that are present in the real world map [3].

#### c) Augmented Reality GPS:

MAR include the Global Positioning System (GPS) for current location and compass for device orientation. AR GPS Drive/Walk Navigation makes use of the Smartphone's GPS and camera to execute a car navigation system with an augmented reality-powered technology [3].

From the above example UX in Augmented Reality for the deployment of real-time adaptation between physical and virtual world and developed a generic framework to maximize the UX by improving the interaction of MAR in the real time. Based on the study, a central gap in literature has been identified on how to design for quality experience of user in mobile AR.

### 4. CONCLUSION

In consequence of the peoples growing expectations about the front-line technology, it has become progressively more important to understand user experience of Mobile AR technology and the services built around them. UX is a broad concept that illustrating the subjective experience resulting from interaction with technology such as MAR. This paper has presented a review of user experience studies in selective Mobile Augmented Reality (MAR) research.

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