Sheng Xingrui, Zhou Quanhua, Xie LiTian

APPLICATION OF AUGMENTED REALITY TECHNOLOGY ON MOBILE PLATFORMS

This article will introduce what is the Mobile Augmented Reality ,the development of Mobile Augmented Reality technology and the overview of how Mobile Augmented Reality applications work.

INTRODUCTION

Augmented Reality (AR) technology is a technology that skillfully integrates virtual information with the real world. The Mobile Augmented Reality (MAR) technology is based on AR that uses a camera on a mobile device to identify a specific image, or to transmit relevant information from the camera based on the current position of the mobile device or the current orientation of the sensor, and finally display it on the display of the mobile device

I. THE DEVELOPMENT OF MAR

In fact, humans bring AR effects outdoors, not through mobile phones. In 2000, Bruce Thomas from the University of South Australia developed a FPS game called ARQuake to bring AR to the real world outside. However, it is not easy to play this game. Need many devices which is really strenuous. With the development of science and technology, especially the continuous update of mobile devices such as smartphones, it made AR technology have more possibilities. In 2016, Nintendo released a mobile game called "pokemon go" that let players can discover, capture and fight Pokémon in the real world through their smartphones. It was certified to five Guinness World Records on August 17, 2016, and was recognized as the "most profitable mobile game in a month since its launch". This game successfully utilizes MAR technology to combine virtuality and reality. In order to seek Pokémon, people are willing to go to more places outdoors and get the better reality, realizing the meaning of MAR technology. Now more and more applications use MAR technology, such as maps, shopping apps, etc. MAR technology is also not only used for entertainment but also for the convenience of life for us.

II. HOW MAR APP WORKING

The MAR application working steps can usually be divided into the following steps:

(1) Video capture: real-time capture of real-world video through the camera of a mobile phone;

(2) Graphics system: computer graphics system generates virtual images or animations;

(3) Video synthesis: video synthesis of real scenes and virtual images (or animations);

(4) Video output: output the video or image of the enhanced scene to the mobile phone screen.

It should be noted that there is an unavoidable system delay between the video acquired in real time and the virtual images produced by the graphics system, which is a major cause of errors in dynamic AR systems. However, in this implementation, the user's vision is completely under the control of the computer, and this system delay can be compensated by the coordination between the two channels of virtual reality inside the computer

Most of the MAR applications adopt this method, as MAR developers, you only need to understand the general process of MAR working, and do not need to pay too much attention to the underlying implementation of MAR

III. CONCLUTION

With the improvement of the hardware performance of mobile devices and the advancement of related technologies, mobile devices represented by smart phones have begun to have faster computing processing capabilities, high-performance built-in cameras and high-resolution screens, which can well meet the characteristics of virtual and real combination, timely interaction and three-dimensional registration, thus laying a good foundation for the gradual application of augmented reality technology to people's daily life and entertainment. It can be expected that the seamless connection between online and offline will usher in a new era of mobile Internet for mankind.

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Sheng Xingrui, undergraduate's student in the Faculty of Information Technology and Control of BSUIR, 734392047 @qq.com

Zhou Quanhua, undergraduate's student in the Faculty of Information Technology and Control of BSUIR, 2926634184@qq.com

Xie Litian, undergraduate's student in the Faculty of Information Technology and Control of BSUIR, 2605108455@qq.com

Trofimovich Alexcy, Senior Lecturer of Information Technologies in Automated Systems Department, trofimaf@bsuir.by