

A SURVEY ON INTERIOR DESIGN USING AUGMENTED REALITY

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ABSTRACT

In an AR environment, the virtual furniture can be displayed and modified in real-time on the screen, allowing the user to have an interactive experience with the virtual furniture in a real-world environment. Finally, this study proposes a new method for applying AR technology to interior design work, where a user can view virtual furniture and communicate with 3D virtual furniture data using a dynamic and flexible user interface. Plus, all the properties of the virtual furniture can be adjusted using occlusion-based interaction method for a Tangible Augmented Reality

1. INTRODUCTION

AR or mixed reality is a new technology that requires the overlay of computer graphics on real world. Augmented Reality is also known as Mixed Reality(MR), which mean a multi-axis spectrum of areas that cover Virtual Reality(VR). Virtual Reality means computer-generated 3D environments that permit the user to enter

and interact with man-made surrounding. The user are able to absorb them to changing degree in the computers artificial world which may either be a simulation of some form of reality or simulation of complex phenomenon VR and telepresence. Virtual Reality actually means an immersive multi-media, is a computer-simulated surrounding that can simulate physical presence in places in the real world or artificial worlds. It is mainly used for applications related to immersive, highly visual, 3D environments.

Telepresence means a set of technologies which allow a user to feel as if they were present, or to have an effect, via telerobotic at a place other than their true location.

2 .RELATED WORK

a.)The Effects of Visual Realism
on Search Tasks in Mixed Reality

Simulation

Date of Publication: January 2013

Author::ChaLee,Gustavo

A.Rincon,GregMeyer,Tobias

Hollerer & Doug A. Bowman

In this paper, we investigate the validity of Mixed Reality (MR) Simulation by conducting an experiment studying the effects of the visual realism of the simulated environment on various search tasks in Augmented Reality (AR). MR Simulation is a practical approach to conducting controlled and repeatable user experiments in MR, including AR. This approach uses a high-fidelity Virtual Reality (VR) display system to simulate a wide range of equal or lower fidelity displays from the MR continuum, for the express purpose of conducting user experiments. For the experiment, we created three virtual models of a real-world location, each with a different perceived level of visual realism. We designed and executed an AR experiment using the real-world location and repeated the experiment within VR using the three virtual models we created. The experiment looked into how fast users could search for both physical and virtual information that was present in the scene. Our experiment demonstrates the usefulness of MR Simulation and provides early evidence for the validity of MR Simulation with respect

to AR search tasks performed in immersive VR.

b)Haptic Palpation for Medical

Simulation inVirtual Environments

Date of Publication: April 2012

Authors: Ullrich, S.; Kuhlen, T.

Virtual Reality Group, RWTH

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In,Ullrich, S.; Kuhlen, T. Palpation is a physical examination technique where objects, e.g., organs or body parts, are touched with fingers to determine their size, shape, consistency and location. Many medical procedures utilize palpation as a supplementary interaction technique and it can be therefore considered as an essential basic method. However, palpation is mostly neglected in medical training simulators, with the exception of very specialized simulators that solely focus on palpation, e.g., for manual cancer detection. In this article we propose a novel approach to enable haptic palpation interaction for virtual reality-based medical simulators. The main contribution is an extensive user study conductedwith a large group of medical experts. To provide a plausible simulation framework for this user study, we contribute a novel and detailed interaction algorithm for palpation with tissue dragging, which utilizes a multi-object force algorithm

to support multiple layers of anatomy and a pulse force algorithm for simulation of an arterial pulse..

c) Augmented reality approach for paper map visualization

Date of Conference: 27-29 Dec. 10

Augmented reality approach for paper map visualization” Paper map visualization is good value proposition, even in the ‘everything is digital’ world, because of the huge information density and ease of use at any remote or mobile location, especially in the military context. Completely doing away with the paper map brings in a discomfort factor for the military user. In this paper, we present a paper map data visualization solution that augments the information from the digital world onto a spread of a paper map. Augmented Reality techniques are used to enhance paper maps digitally resulting in a 3D visualization space with some interactions. The dynamic information of the terrain, placing virtual objects and interaction are features of the digital world that are superimposed onto a paper map. We have used ARToolkit marker tracking based approach and a see through Head Mounted Device for implementation.

c) “The study and improvement of Augmented reality based on feature matching”

Date of Conference: 15-17 July 2011

Authors: RuobingYang MediaSch., China

In, Ruobing Yang Media Sch., Linyi Univ., Linyi, China, Augmented reality is an emerging technology of Virtual Reality, which has a great development and application prospects. Augmented Reality involves knowledge about sensors, image recognition, computer vision, human-computer interaction, virtual reality, and many other areas. The key technologies include displaying, registration and tracking, interactive etc. Among them, registration and tracking is the most important technology. In Augmented reality system, the traditional methods of registration and tracking technology has the problems of not accurate, low efficient. In this paper, improved feature matching algorithm is used in augmented reality system. Experimental results show that, compared with traditional methods, improved algorithm can significantly improve the efficiency of registration and tracking.

d) Study of Augmented Reality

Ludwig and Reimann(2005) offer an organizational scheme which argues that potential AR applications fall into three main categories: (a) presentation and visualization, (b) industry, and (c) edutainment. Additionally, Hamilton (2011) offers an extensive breakdown and analysis of AR applications within education, as well as within the media and entertainment industry, the gaming

industry, the travel and tourism industry, the field of marketing, the expanding field of online social networks, and in everyday life. While Hamilton (2011) and others point out that many current AR applications may seem gimmicky and transient, the fact remains that many of the AR applications discussed by Azuma (1997) have been refined and continue to play important parts in our modern world

3.CONCLUSION

This paper proposes a marker based augmented reality application using Android operating system which will help to combine virtual objects with the real environment.

4.REFERENCE

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