

Data Optimization and Transmission in Restaurant Using Virtual Reality

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ABSTRACT

The ideas behind virtual reality are based upon theories about a long held human wish to escape the boundaries of the real world by embracing cyberspace. When we can interact with this virtual world in a more naturalistic manner which will generate new forms of human machine interaction (HMI). The aim is to move beyond standard forms of interaction such as the keyboard and mouse which most people work with on a daily basis. This is seen as an unnatural way of working which forces people to adapt to the demands of the technology rather than the other way around. But a virtual environment does the opposite. It allows someone to fully immerse themselves in a highly visual world which they explore by means of their senses. This natural form of interaction within this world often results in new forms of communication and understanding.

Keywords: HMI, Virtual Reality, UL, VE

I. INTRODUCTION

VIRTUAL reality (VR) technology is very much being used as an assessment and training of upper limb (UL) motor function in patients with post-stroke hemiparesis. Interest in rehabilitation technology is related to the potential for VR to provide more intensive training environments than are usually available during post-stroke rehabilitation to promote better motor recovery. Advantages of using VR technology include the ability to create training opportunities incorporating salient motor tasks that need to be reacquired post-stroke and to manipulate task difficulty and feedback for effective, individualized motor learning paradigms. Feedback provided during VR training may be used more effectively to improve the quality of UL movement. There were large differences in kinematics of movements made in 2-D motion-capture VEs compared to PEs and differences were more marked in stroke patients compared to healthy subjects. In this article, we propose the design and use of VR in restaurant for automatic digital menu transmission through VR display.

Virtual Reality technology is used to wide transmission of data without occurring of noise. In this system, the menu is provided automatically in indoor without any manual work. It reduced the complexity among the

server and customer. The proposed system can be used in restaurant whenever the supply serving to customer. The proposed system is consists of table top transmitter section and customer table receiver system. Whenever the customer reach the table, then PIR sensor sense people identification. Then the user can get menu at the same using virtual reality and also it reduced complexity occurring among to customer and server. It is used for hotel management to save the time for waiter and customer.

Once the correspondences between two neighbouring views are derived, synthesized views at arbitrary viewpoints between those views can be generated. We use an interpolation algorithm which is based on the related concepts of "View Interpolation" and "View Morphing" to generate the synthesized views. This interpolation algorithm involves the computation of the position and the color of the pixels using the correspondences between two images, described by the following equations.

$$P_i = w_1P + w_2P_0; \quad (1)$$

$$I_i(P_i) = w_1I(P) + w_2I(P_0); \quad (2)$$

where

$$w_1 + w_2 = 1$$

P and P' are the position of the corresponding points in the view 1 and the view 2, respectively. I (P) and I'(P') are the color of the corresponding points in view 1 and view 2 as well. P_i is the interpolated position and I_i(P_i) is the interpolated color and w₁ and w₂ (w₁ + w₂ = 1) are weighting factors.

II. METHODS AND MATERIAL

Existing System

- In the golden days, the suppliers only serve the menu to the customer.
- But every often we asking the menu from the supplier are quit complex.

Drawbacks

- They need other help.
- There is no automatic system.
- Power consumption is high.

Proposed System:

- Here we introduce a new technology in restaurant for automatic digital menu transmission through mobile phone.
- Virtual reality technology is used to wide transmission of data without occurring of noise.

Advantages

- The system automatically provide the menu in indoor without any manual work.
- It reduces the complexity among to server and customer.

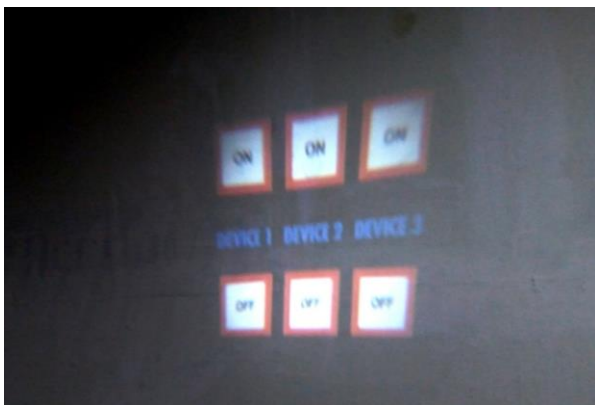


Figure 1: Image shown to table (Menu)

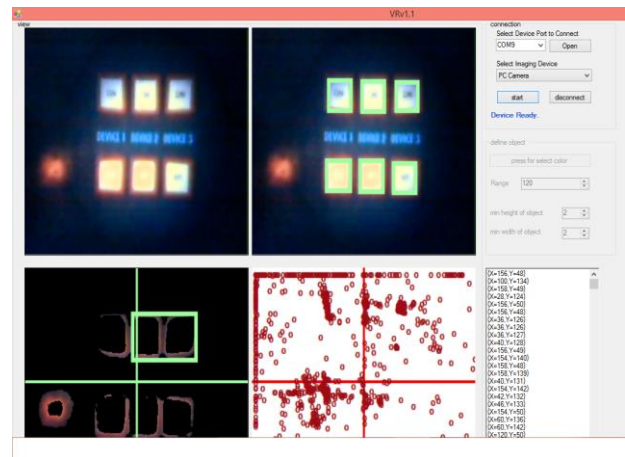


Figure 2: Process controlled on PC



Figure 3: Virtual Reality Device

III. RESULT AND DISCUSSION

As indicated above, the great benefit of using VR in research is its flexibility. Real worlds can be and artificial environments created from nothing. Moreover, the use of a VE can be repeated over and over again, so that an individual can be trained in an identical but repeated situation; of course difficulty can be titrated to provide a progressive learning experience. Each individually matched to an active participant but observing the screen and thus watching exactly the same spatial displacements as made by the active participant, but without controlling the interface. Doing such a thing in reality is possible but it is difficult.

VR is clearly a unique medium, and paradoxical insofar as it is essentially passive (since participants are typically seated and view a screen or head immersion screens in a helmet) but it is active in that it engages the participant in self-initiated displacements so that they make active decisions about where to go and what to see and do, just as when they are walking about or driving car autonomously. Activity versus passivity (in both reality and in VR) has attracted a great deal of research attention. The general assumption was always that active

exploration would always produce better spatial learning, and some found evidence for that. However the results were always mixed and controversial. What appeared to have escaped their notice is that use of VEs – particularly desktop VEs – always involves some kind of abnormal participant activity such as moving a mouse or joystick or pressing keyboard keys.

APPLICATIONS

- It is used for hotel management to save the time for waiter and customer.
- It can be used in medical studies to enable students to know the human body structure.
- It can be used in scientific research laboratories so that scientist can easily research on a specific topic.

IV. FUTURE ENHANCEMENT

There are many future applications of VEs are dependent upon our better understanding of the way in which the brain processes information from VEs compared to reality. Also, VR may have been held back in the past by the fact that no universal software has been available. In the 1980s and 90's, easy-to-use packages such as Supers cape, easily programmable with draw-down menus, were generally available at a low cost and with support from the company. Many universities adopted Supers cape for its VR research. However, Supers cape withdrew from the academic market, lured by Japanese and American applications in architecture and modelling.

V. CONCLUSION

VET has brought a range of benefits, and has great potential for future development. Although there are issues to be considered when using VEs, it can generally be concluded that information acquisition from VE simulations is reliable and authentic, equivalent to that gained from experience within real environments. Assuming that VE technology remains affordable, there are likely to be many important future applications, in situations where training in reality is dangerous, where real spatial environmental cues cannot be easily manipulated and varied, and where the augmentation of real experience is beneficial.

VI. REFERENCES

- [1] Conway L, Volz R A, Walker M W. Teleautonomous systems: Projecting and coordinating intelligent action at a distance. *IEEE Transactions on Robotics and Automation*, 1990, 6, 146–158.
- [2] Bambang R. Development of Internet telerobotics systems. *Proceedings of information Systems Management Research Concentration*, France, 2002.
- [3] FU Xiu-hui, HUA Jian-ning, ZHENG Wei etc. Study on task produced the method of Internet-based teleoperation robot. *Micro-Computer Information J*, 2006, 3-2: 185-187.
- [4] Shengtong Zhong, Philippe Le Parc, Jean Vareille, "INTERNET-BASED TELEOPERATION: A CASE STUDY TOWARD DELAY APPROXIMATION AND SPEED LIMIT MODULE", *ICINCO 2007, Proceedings of the Fourth International Conference on Informatics in Control, Automation and Robotics, Robotics and Automation 1*, Angers : France (2007)
- [5] L. Kaddour-El-Boudadi, J. Vareille, P.L. Parc, N. Berrached, "Remote control on Internet, long distance experiment of remote practical works, measurements and results", *International Review on Computers and Software (IRECOS)*, vol. 2, n°3, May 2007.
- [6] E. Witrant, C. Anudas-de-wit, D. Georges, and M. Alamir, "Remote stabilization via time-varying communication network delays: Application to TCP networks", *IEEE Conference on Control Applications*, Taipei, Taiwan, and September 2-4, 2004.
- [7] I. Dilaneh, L. Laval, "Stabilization of networked control systems with uncertain time-varying delays", *17th Mediterranean Conference on Control & Automation, MED'09*, Greece, June 24-26, 2009.
- [8] Riyanto T. Bambang, Development of Architectures for Internet Telerobotics Systems, *Journal of Bionic Engineering* (2007) Vol.4 No.4
- [9] Philippe Le Parc, E. Pardo, A. Touil, J. Vareille, "Virtual Reality to Improve Remote Control in Presence of Delays", published in "2010 IEEE International Conference on Virtual Environments, Human-Computer Interfaces, and Measurement Systems (VECIMS 2010)", Tarente : Italy (2010)"
- [10] Ogor, P., 2001. Une architecture generique pour la supervision sure a distance de machines de production avec Internet. Ph.D. thesis, Universite de Bretagne Occidentale.
- [11] ADEPA, 1981. GEMMA: Guide d'etudes des modes de marche et d'arrêt. Paperratter seo tools