Ecotourism of Perlis State Park in Panoramic View Approach for Interactive Navigation

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ABSTRACT

Nowadays, developing a website is a priority for the organizations in various areas. Business, entertainments, educations and tourism is one of the main areas that need the interactive navigation for their website. However, with the ability to view from different views, Virtual Reality is the latest technology for the tourism website in order to develop the interactive navigations. The focus of this study is to design friendly interface to improve the user experience with the panoramic view for them to interact successfully in a Quick-Time VR Image-Based Environment and to compare the Panoramic View images against the static images. Panoramic view is an alternative technique that can navigate interactively and involves the user experiences with manipulating the image by showing the transformation of those existing view.

ABSTRAK

Hari ini pembangunan sesebuah laman web ialah suatu kemestian bagi pelbagai organisasi di dalam pelbagai bidang. Bidang perniagaan, hiburan, dan perlancongan antara bidang yang memerlukan pendidikan pembangunan sesebuah laman web bagi organisasi mereka. Namun begitu, tarikan utama untuk seseorang melayari sesebuah laman web ialah tarikan navigasi secara interaktif. Memiliki keupayaan untuk memaparkan imej dari pelbagai sudut, Reality Maya merupakan teknologi terkini yang dapat meningkatkan navigasi secara interaktif. Objektif utama kajian ini ialah untuk membangunkan antaramuka pengguna menggunakan teknik realiti maya Panorama melalui Quick Time VR bagi meningkatkan ciri mesra pengguna, objektif kedua ialah membandingkan penggunaan imej panorama dengan imej statik. Panorama merupakan suatu teknik alternatif yang membolehkan navigasi berlaku secara interaktif dan melibatkan penyertaan pengguna melalui proses maipulasi imej.

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LIST OF ABBREVIATIONS

PSP - Perlis State Park

VR - Virtual Reality

 $\label{eq:qtvr} QTVR \qquad \quad - \mbox{ QuickTime VR}$

CHAPTER 1: INTRODUCTION

1.1 Introduction of the Study

Ecotourism is 'Traveling to relatively undisturbed or uncontaminated natural areas with the specific objective of studying, admiring and enjoying the scenery and its wild plants and animals, as well as any existing cultural manifestations(both past and present) found in these area'. (Ceballos-Lascurain, 1997). Or in the other word is the nature and culture based tourism which avoid damages to the environment. Today, Ecotourism becoming one of the most aggressively sector growth in Malaysia. Based on Malaysia Tourism Statistic Report(2001), its about 1.25 million tourists visiting Malaysia to discover the means of nature. It is because Malaysia is one of the destinations that provide the undisturbed natural and cultural assets.

The contents of the thesis is for internal user only

REFERENCES

- Amat, R., Osman, K., (2002). Tourism Development in Transfrontier Protected Areas.

 A Study from Perlis State Park. Proceeding of IUCN, WCPA-EA-4, Taipei

 Conference. 555-575.
- Shores, J.N.,(1999). The Challenge of Ecotourism: A Call for Higher Standards.

 Retrieved, August, 31, 2005, from

 http://www2.pleneta.com/mader/planeta/0295shones.html
- Kang, S.B.,(1997). Virtual Navigation of Complex Scenes using Clusters of Cylindrical Panoramic Images. Cambridge Research Laboratory.
- Verbree, E., E., Zlatanova, S., & et al.(2004). Interactive Navigation Services through Value-Added CycloMedia Panoramic Images.
- Feighey, W.,(2003). Negative Image? Developing the Visual in Tourism Research,

 Current Issues in Tourism, 6(1), 77-85.
- Berger, J.,(1972). Way of Seeing. London: British Broadcasting Association and Penguin.

- Fyfe, G., Law, J.,(1998). Introduction: On the Invisibility of the Visible. In G. Fyfe and J. Law(eds). Picturing Power Visual Depiction and Social Relations.
 London: Routledge.
- Harper, D.,(2000). Reimagining Visual Methods. Galileo to Neuromacer. In N.K Denzin and Y.S Lincoln(eds). Handbook of Qalitative Research, London: Sage.
- Chen, S.E.,(1995). QuickTime VR- An Image-Based Approach to Virtual

 Environment Navigation from Computer Graphic (SIGGRAPH 95), pp 29-38,

 August 1995.
- Newman, T.W.,(2004). Usability and User Engagement in Tourism Websites. Paper Presented at the New Zealand Tourism and Hospitality Research Conference 2004.
- Fraternali, P. (1999). Tools and Approaches for Developing Data-Intensive Web Application: A Survey. *ACM Computing Surveys*, *31*(3), 227-263.
- Nielson, J. (1990). *Changes in Web usability*, from http://www.useit.com/alertbox/9712a.html

- Shneiderman, B. (1987). User interface design and evaluation for an electronic encyclopedia, in: G. Salvendy (Ed.). Cognitive Engineering in the Design of Human-Computer Interaction and Expert Systems, 207-223.
- Swierenga, S. J. (1990). Menuing and scrolling as alternative information access techniques for computer systems interfacing with the user. Paper presented at the Human Factors Society 34th Annual Meeting.
- Tognazzini, B. (2003). *First Principle*. Retrieved September 27, 2005, from http://www.asktog.com/basics/firstprinciples.html
- Gotz, D. (2002) et.al. IRW: An Incremental Representation for Images-Based Walkthroughs, A Survey. ACM Computing Surveys, 67-76