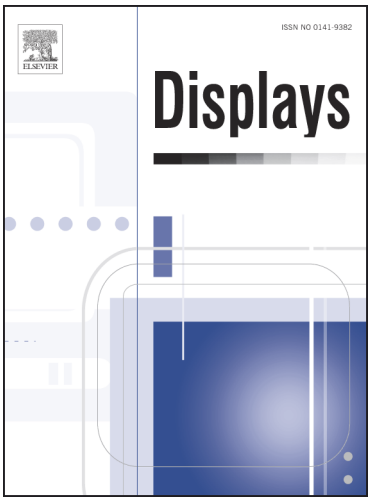
Accepted Manuscript



Motion Parallax from Head Movement Enhances Stereoscopic Displays by Improving Presence and Decreasing Visual Fatigue

Sirisilp Kongsilp, Matthew N. Dailey

PII: S0141-9382(16)30217-7
DOI: http://dx.doi.org/10.1016/j.displa.2017.07.001
Reference: DISPLA 1832

To appear in: *Displays*

Received Date: 21 November 2016
Accepted Date: 5 July 2017

Please cite this article as: S. Kongsilp, M.N. Dailey, Motion Parallax from Head Movement Enhances Stereoscopic Displays by Improving Presence and Decreasing Visual Fatigue, *Displays* (2017), doi: http://dx.doi.org/10.1016/j.displa.2017.07.001

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

ACCEPTED MANUSCRIPT

Motion Parallax from Head Movement Enhances Stereoscopic Displays by Improving Presence and Decreasing Visual Fatigue

Sirisilp Kongsilp[a,b,*], Matthew N. Dailey[b]

[a] *Faculty of Engineering, Thammasat University, Pathumthani, Thailand.*
[b] *Department of Computer Science and Information Management. Asian Institute of Technology, Pathumthani, Thailand*

Abstract

Virtual reality has advanced significantly recent years. Public attention and most academic studies of late have centered on head-worn VR. However, there are other VR modalities, and different modalities may be suitable in different situations. In this paper, we investigate Fish Tank Virtual Reality (FTVR) systems, which is close to readiness to be part of our everyday lives. In particular, stereoscopic displays and head tracking systems, some of the most important hardware components of FTVR systems, are now widespread commodities. This means that FTVR may soon become a platform for everyday applications. However, further understanding of the capabilities, limitations, and human factors of FTVR systems using modern commodity hardware is critical to the adoption of FTVR. Since one of the most important aspects of a FTVR system is how well it provides a sense of *presence* to users, we present a study that explores the role of motion parallax when combined with stereopsis in a FTVR system. We measure fatigue and subjective perception of presence using standard questionnaires. We find that users receiving both cues have lower visual fatigue and higher ratings for presence than those receiving

*Corresponding author
Email addresses: sirisilp@engr.tu.ac.th (Sirisilp Kongsilp), mdailey@ait.asia (Matthew N. Dailey)

ACCEPTED MANUSCRIPT

Download English Version:

https://daneshyari.com/en/article/4970574

Download Persian Version:

https://daneshyari.com/article/4970574

Daneshyari.com