7th Symposium on Applied Perception in Graphics and Visualization 2010

(APGV 2010)

Los Angeles, California, USA
23 – 24 July 2010

Editors:

Stephen N. Spencer

ISBN: 978-1-61738-936-8
Table of Contents

Preface .................................................................................................................. 7

HDR and Illumination

Statistical Regularities in Low and High Dynamic Range Images ......................... 9
*Tania Pouli, Douglas Cunningham, Erik Reinhard

A Reassessment of the Simultaneous Dynamic Range of the Human Visual System ......................................................... 17
*Timo Kunkel, Erik Reinhard

Measuring the perception of light inconsistencies .............................................. 25
*Jorge Lopez-Moreno, Veronica Sundstedt, Francisco Sangorrín, Diego Gutiérrez

Displays and Visualization

Evaluating Effectiveness of Illustrative Visualization of Schematic Diagrams for Maintenance Tasks ........................................... 33
*Sung Ye Kim, Insoo Woo, Ross Maciejewski, David S. Ebert, Timothy D. Ropp, Krystal Thomas

Perceptual Issues in Optical-See-Through Displays .......................................... 41
*Anke Huckauf, Mario H. Urbina, Irina Böckelmann, Lutz Schega, Rüdiger Mecke, Jens Grubert, Fabian Doil, Johannes Tümmler

Analysis of Disparity Distortions in Omnistereoscopic Displays
*Vincent Couture, Michael Langer, Sébastien Roy
(Published in a special issue of ACM Transactions on Applied Perception)

Distance, Size and Motion Perception

How does Presentation Method and Measurement Protocol Affect Distance Estimation in Real and Virtual Environments? ......................................................................................................................... 47
*Timofey Grechkin, Tien Dai Nguyen, Jodie M. Plumert, James F. Cremer, Joseph K. Kearney
(Published in a special issue of ACM Transactions on Applied Perception)

Horizon Estimation: Perceptual and Computational Experiments ................................................................. 49
*Christian Herdtweck, Christian Wallraven

Egocentric Distance Judgments in a Large Screen Display Immersive Virtual Environment ......................................................... 57
*Ivelina V. Alexandrova, Paolina T. Teneva, Stephan de la Rosa, Uwe Kloos, Heinrich Bültchhoff, Betty J. Mohler

Can I Pass?: Using Affordances to Measure Perceived Size in Virtual Environments ................................................................. 61
*Michael Geuss, Jeanine Stefanucci, Sarah Creem-Regehr, William B. Thompson

A System for Exploring Large Virtual Environments That Combines Scaled Translational Gain and Interventions ............... 65
*Xianshi Xie, Qiaofeng Lin, Haojie Wu, Gayathri Narasimhan, Timothy P. McNamara, John Rieser, Bobby Bodenheimer
# Table of Contents

## Attention and Vision

- Exploring Peripheral LOD Change Detections during Interactive Gaming Tasks .......................................................... 73
  *Francisco Lopez, Ramon Molla, Veronica Sundstedt*

- Saliency for Animated Meshes with Material Properties ................................................................................................. 81
  *Abdullah Bulbul, Cetin Koca, Tolga Capin, U§ur GÜdükbay*

- What Your Design Looks Like to Peripheral Vision ............................................................................................................. 89
  *Alvin Raj, Ruth Rosenholtz*

## Image Processing

- Detection of Image Stretching .............................................................................................................................................. 93
  *Yuzhen Niu, Feng Liu, Xueqing Li, Huiyun Bao, Michael Gleicher*

- Visually Significant Edges ...................................................................................................................................................... 95
  *Tunc Ozan Aydin, Martin Cadik, Karol Myszkowski, Hans-Peter Seidel*

  (Published in a special issue of ACM Transactions on Applied Perception)

## Faces

- Perception of Linear and Nonlinear Motion Properties using a FACS Validated 3D Facial Model ............................................. 101
  *Darren Cosker, Eva Krumhuber, Adrian Hilton*

- A Morphing-Based Analysis of the Perceptual Distance Metric of Human Faces ................................................................. 109
  *Nadine Gummersbach, Volker Blanz*

- Perceptually Motivated Guidelines for Voice Synchronization in Film
  *Elizabeth J. Carter, Lavanya Sharan, Laura Truoti, Iain Matthews, Jessica K. Hodgins*

  (Published in a special issue of ACM Transactions on Applied Perception)

## Realistic Characters

- The Saliency of Anomalies in Animated Human Characters
  *Jessica Hodgins, Sophie Jörg, Carol O'Sullivan, Sang Il Park, Moshe Mahler*

  (Published in a special issue of ACM Transactions on Applied Perception)

- Interaction between real and virtual humans during walking: perceptual evaluation of a simple device .......................... 117
  *Anne-Hélène Olivier, Richard Kuipa, Jan Ondrej, Armel Créual, Julien Pettré*

- Movements and voices affect perceived sex of virtual conversers ...................................................................................... 125
  *Rachel McDonnell, Carol O'Sullivan*

- The Perception of Finger Motions ..................................................................................................................................... 129
  *Sophie Jörg, Jessica Hodgins, Carol O'Sullivan*
# Table of Contents

## Depth Perception

The Effect of Stereo and Context on Memory and Awareness States in Immersive Virtual Environments ............................... 135
*Adam Bennett, Matthew Coxon, Katerina Mania*

Pointing in Pictorial Space: Quantifying the Perceived Depth Structure in Mono and Stereo Images of Natural Scenes
*Maarten Wijntjes, Sylvia Pont*
(Published in a special issue of ACM Transactions on Applied Perception)

A Framework for Enhancing Depth Perception in Computer Graphics ................................................................. 141
*Zeynep Cipiloglu, Abdullah Bulbul, Tolga Capin*

Depth Judgment Measures and Occluding Surfaces in Near-Field Augmented Reality ........................................... 149
*Gurjot Singh, J. Edward Swan II, J. Adam Jones, Stephen R. Ellis*