



IEEE Symposium on 3D User Interfaces 2008

Reno, Nevada, USA

March 8 - 9, 2008

Proceedings



Contents

Message from the Symposium Chairs.....	vi
IEEE Visualization and Graphics Technical Committee.....	vii
Symposium Committee.....	viii
Program Committee.....	viii
Reviewers.....	ix

Papers and Technotes

Session 1: 3D Interaction from Desktop to Immersion

Withindows: A Framework for Transitional Desktop and Immersive User Interfaces	3
Alex Hill, Andrew Johnson	
Tangible User Interfaces Compensate for Low Spatial Cognition	11
John Quarles, Samsun Lampotang, Ira Fischler, Paul Fishwick, Benjamin Lok	

Session 2: Devices

A Haptic Virtual Borescope for Visual Engine Inspection Training	19
Deepak Vembar, Andrew T. Duchowski, Sajay Sadasivan, Anand K. Gramopadhye	
TubeMouse - A Two-Handed Input Device for Flexible Objects	27
Christian Geiger, Oliver Rattay	
Tech-note: Digital Foam.....	35
Ross T. Smith, Bruce H. Thomas, Wayne Piekarski	
Tech-note: Strain-based User Interface Using a Wooden Balance Beam	39
Sho Amano, Makoto Iida, Takeshi Naemura, Hiroyuki Ota	

Session 3: Input Techniques

Assessing the Effects of Orientation and Device on (Constrained) 3D Movement Techniques	43
Robert J. Teather, Wolfgang Stuerzlinger	
Tech-note: Dynamic Dragging for Input of 3D Trajectories.....	51
Daniel F. Keefe, Robert C. Zeleznik, David H. Laidlaw	
Tech-note: rapMenu: Remote Menu Selection Using Freehand Gestural Input	55
Tao Ni, Ryan P. McMahan, Doug A. Bowman	

Session 4: Haptics

HEMP – Hand-Displacement-Based Pseudo-Haptics: A Study of a Force Field Application.....	59
Andreas Pusch, Olivier Martin, Sabine Coquillart	
3D Virtual Haptic Cone for Intuitive Vehicle Motion Control	67
B. Horan, Z. Najdovski, S. Nahavandi and E. Tunstel	
Real-Time 3D Fluid Interaction with a Haptic User Interface	75
Javier Mora, Won-Sook Lee	

Session 5: 3D Navigation and Locomotion

Navidget for Easy 3D Camera Positioning from 2D Inputs	83
Martin Hachet, Fabrice Declé, Sebastian Knödel, Pascal Guitton	

Elastic Control for Navigation Tasks on Pen-based Handheld Computers	91
Martin Hachet, Alexander Kulik	
LLCM-WIP: Low-Latency, Continuous-Motion Walking-in-Place	97
Jeff Feasel, Mary C. Whitton, Jeremy D. Wendt	
Tech-note: 4Record – Recording and Controlling Spatiotemporal Paths in Virtual Environments	105
Mario Doulis, Marco Rietmann, Jan Pflüger	

Session 6: Augmented Reality and Multimodality

Interactive Bits: Prototyping of Mixed Reality Applications and Interaction Techniques through Visual Programming.....	109
Wolfgang Broll, Jan Herling, Lisa Blum	
Studies on the Effectiveness of Virtual Pointers in Collaborative Augmented Reality	117
Jeff Chastine, Kristine Nagel, Ying Zhu, Mary Hudachek-Buswell	
User needs analysis to design a 3D multimodal protein-docking interface	125
Nicolas Férey, Guillaume Bouyer, Christine Martin, Patrick Bourdot, Julien Nelson, Jean-Marie Burkhardt	

Posters

Poster: Sliding Viewport for Head Mounted Displays in Interactive Environments	135
Andrei Sherstyuk, Dale Vincent, Caroline Jay	
Poster: A study on EEG oscillations for BCI during standing	137
Hideaki Touyama, Michitaka Hirose	
Poster: ARLIST - An Augmented Reality Environment for Life Support Training	139
Fabrício Preto, Isabel H. Manssour, Emerson R. da Silva, Maria H. I. Lopes, Márcio S. Pinho	
Poster: A Framework for Interaction Interoperability in Virtual Environments	141
Hussein M. Ahmed, Denis Gračanin, Ayman Abdel-Hamid	
Poster: Evaluation of Wayfinding Aid Techniques in Multi-Level Virtual Environments.....	143
Felipe Bacim, Andre Trombetta, Rafael Rieder, Marcio Pinho	
Poster: The NetEyes Collaborative, Augmented Reality, Digital Paper System	145
D. McGee, X. Huang, P. Barthelmess, P. Cohen	
Poster: Generic Redirected Walking & Dynamic Passive Haptics: Evaluation and Implications for Virtual Locomotion Interfaces	147
Frank Steinicke, Gerd Bruder, Timo Ropinski, Klaus Hinrichs	
Poster: Tangible Controllers for 3D Widgets.....	149
Krzysztof J. Kruszyński, Robert van Liere	
Poster: A Software Framework for Easy Integration of Speech Recognition into 3D Browsers.....	151
Ednaldo Brigante Pizzolato, Diego Daniel Duarte, Marcio Merino Fernandes	
Poster: Authoring Tool for Intuitive Editing of Avatar Pose Using a Virtual Puppet	153
Takafumi Serizawa, Yasuyuki Yanagida	
Poster: Effects of Head Tracking and Stereo on Non-Isomorphic 3D Rotation	155
Joseph J. LaViola Jr., Andrew S. Forsberg, John Huffman, Andrew Bragdon	
Poster: Toward an Interactive Box-shaped 3D Display: Study of the Requirements for Wide Field of View	157
Roberto Lopez-Gulliver, Shunsuke Yoshida, Sumio Yano, Naomi Inoue	
Poster: Free Form Projection Display: Virtual Image Located Inside Real Object	159
Daisuke Kondo, Ryugo Kijima	

Poster: Image-Based 3D Display with Motion Parallax using Face Tracking	161
Tsuyoshi Suenaga, Yasuyuki Tamai, Yuichi Kurita, Yoshio Matsumoto, Tsukasa Ogasawara	
Poster: Evolution of a Theremin-Based 3D-Interface for Music Synthesis	163
Christian Geiger, Holger Reckter, David Paschke, Florian Schulz	
Poster: 3-D Display Using Motion Parallax for Outdoor User Interface	165
Kazutake Uehira, Masahiro Suzuki, Yoshiaki Kobayashi	
Poster: An Approach to Study of Hypermedia Information Navigation in Virtual Environments	167
Kecia Wright, Denis Gračanin	
Poster: Evaluation of an Approach for Remote Object Manipulation Utilizing Dynamic Magnifying Lenses	169
Anuraag Agrawal, Kiyoshi Kiyokawa, Haruo Takemura	
Author Index.....	Inside Back Cover