

2013 XV Symposium on Virtual and Augmented Reality

(SVR 2013)

**Cuiaba, Brazil
28-31 May 2013**



IEEE Catalog Number: CFP1329P-POD
ISBN: 978-1-4799-0459-4

2013 XV Symposium on Virtual and Augmented Reality

SVR 2013

Table of Contents

Message from General Chairs.....	x
Message from Program Chairs.....	xi
Conference Organization.....	xii
Technical Program Committee.....	xiii
Steering Committee	xiv
Reviewers	xv
Acknowledgements.....	xvii
Keynotes.....	xviii

Full Papers

A Dynamic Blocks Platform Based on Projective Augmented Reality and Tangible Interfaces for Educational Activities	1
<i>Rafael Alves Roberto, Daniel Queiroz de Freitas, Francisco Paulo Magalhães Simões, and Veronica Teichrieb</i>	
Virtual Environment Manipulated by Recognition of Poses Using Kinect: A Study to Help Blind Locomotion in Unfamiliar Surroundings	10
<i>Luciana Berretta, Fabrizzio Soares, Deller J. Ferreira, Hugo A.D. Nascimento, Alexandre Cardoso, and Edgard Lamounier</i>	
A Virtual Environment for Training and Assessment of Surgical Teams	17
<i>Paulo Vinícius de Farias Paiva, Liliane S. Machado, and Ana Maria Gondim Valença</i>	
A Comparative Analysis of Fluid Simulation Methods Based on SPH	27
<i>Charles Welton Ferreira Barbosa, Creto Augusto Vidal, and Joaquim Bento Cavalcante-Neto</i>	
Haptic Rendering Techniques Supporting Material Removal	36
<i>Tales Nereu Bogoni and Márcio Sarroglia Pinho</i>	
New Technologies to Integrate Haptics on Web: Expanding the Museu3I	46
<i>Marcilio Olinto de Oliveira Lemos and Liliane S. Machado</i>	

The Relationship between Requirements Engineering and Virtual Reality Systems: A Systematic Literature Review	53
<i>Alinne C. Corrêa dos Santos, Márcio Eduardo Delamaro, and Fátima L.S. Nunes</i>	
Haptic Simulation for Virtual Training in Application of Dental Anesthesia	63
<i>Cléber Gimenez Corrêa, Romero Tori, and Fátima L.S. Nunes</i>	
A Marker-Free Calibration and Registration Process for Multiple Depth Maps from Structured Light Sensors and its Application in Video Avatar Systems	73
<i>Daniel de Andrade Lemeszenski and Ricardo Nakamura</i>	
Study of Sensors Embedded in Smartphones for Use in Indoor Localization	83
<i>Ivan Jorge Boesing, Tomaz Rocha da Silva, and Luciana Porcher Nedel</i>	
An Interaction Tool for Immersive Environments Using Mobile Devices	90
<i>Daniel Pires de Sá Medeiros, Felipe Gomes de Carvalho, Alberto Barbosa Raposo, and Ismael Humberto Ferreira dos Santos</i>	
3D Tracking in Industrial Scenarios: A Case Study at the ISMAR Tracking Competition	97
<i>Francisco Paulo Magalhães Simões, Rafael Alves Roberto, Lucas Silva Figueiredo, João Paulo Silva do Monte Lima, Mozart William Almeida, and Veronica Teichrieb</i>	
Performance Analysis of the xSight 3120 HMD in a Pleural Puncture Medical Simulation	107
<i>Éllen S. Corrêa, Thiago Eustaquio Alves de Oliveira, Paulo Roberto Trenhago, and Jauvane Cavalcante de Oliveira</i>	
A Markeless Augmented Reality Tracking for Enhancing the User Interaction during Virtual Rehabilitation	117
<i>Alexandre Klein and Gilda Aparecida de Assis</i>	
Integrated Pipeline for Natural Interaction with Photorealistic Rendering	125
<i>Jorge Eduardo Falcão Lindoso, Lucas Silva Figueiredo, Veronica Teichrieb, Rafael Alves Roberto, and Ronaldo Ferreira dos Anjos Filho</i>	
Fusion4D: 4D Unencumbered Direct Manipulation and Visualization	134
<i>Roberto Sonnino, Keila Keiko Matsumura, João Luiz Bernardes Junior, Ricardo Nakamura, and Romero Tori</i>	
A Dynamic Representation-Switch Method for Hybrid Crowd Rendering Systems	142
<i>Erasmio A. Silva Jr., Joaquim B. Cavalcante-Neto, Creto A. Vidal, and Teófilo B. Dutra</i>	
Avatars Dance: Dynamic Control of Multiples 3D Articulated Characters through an Integration Layer	152
<i>Herleson Paiva Pontes and Maria Andréia Formico Rodrigues</i>	
The Ghosting Technique Applied to Augmented Reality Visualization	159
<i>Arthur Padilha, Cledja Rolim, and Veronica Teichrieb</i>	

Correcting User's Head and Body Orientation Using a Comfort Pose Function	167
<i>Vitor Reus, Márcio Mello, Luciana Nedel, and Anderson Maciel</i>	
Deviceless Gestural Interaction for Public Displays	175
<i>Thiago Motta and Luciana Nedel</i>	
An Approach for Using Augmented Reality to PSEN	185
<i>Guilherme Augusto Ferreira and Melise Maria Veiga de Paula</i>	
Dynamic QR Codes for Augmented Reality	191
<i>Rodrigo Santos, Bernardo Reis, João Marcelo Teixeira, and Judith Kelner</i>	

Short Papers

Interface Interaction for Grain Harvester Simulator	200
<i>Paulo Lacerda da Silva, William Freitas, Elías Alves Moura, and Tales Nereu Bogoni</i>	
Using Low-Cost Technologies in the Development of People-Monitoring Applications	204
<i>Andre Luiz Satoshi Kawamoto and Flavio Soares Correa da Silva</i>	
A Structure to Integrate Natural Interaction into VR Systems for Education in Health	208
<i>Douglas dos Santos Ferreira and Liliame S. Machado</i>	
Virtual Walking in a Synthetic World through an Low-Cost Interaction Device	212
<i>Carina da Cruz Teixeira, Marlan Külberg, and Jauvane Cavalcante de Oliveira</i>	
A Small-Scale and Flexible Platform for Multi-projector Systems Development	216
<i>Fernando Teubl Ferreira, Celso Kurashima, Marcio Calixto Cabral, and Marcelo Knorich Zuffo</i>	
Cloth Simulation Using Triangular Mesh: A Study of Mesh Adaptivity	220
<i>Suzana Matos França de Oliveira, Creto Augusto Vidal, Joaquim Bento Cavalcante-Neto, Laise Lima de Carvalho, and José Gilvan Rodrigues Maia</i>	
A Robust Real-Time Face Tracking Using Head Pose Estimation for a Markerless AR System	224
<i>Márcio Cerqueira de Farias Macedo, Antônio Lopes Apolinário Junior, and Antonio Carlos dos Santos Souza</i>	
Crowd Simulation with Augmented Reality	228
<i>Guilherme Noronha, Guilherme Batista, and Luciano Pereira Soares</i>	
Augmented Reality Based Interactive Text Book: An Assistive Technology for Students with Learning Disability	232
<i>K.P. Vinumol, Ashsish Chowdhury, Radhika Kambam, and V. Muralidharan</i>	

A Model for the Evaluation of Sensory-Motor Skills Acquisition in Three-Dimensional Virtual Environments	236
<i>Alexandre Martins dos Anjos, Romero Tori, and Fátima L.S. Nunes</i>	
Crowd Evacuation Using Cellular Automata: Simulation in a Soccer Stadium	240
<i>Lilian de Oliveira Carneiro, Joaquim Bento Cavalcante-Neto, Creto Augusto Vidal, and Teofilo Bezerra Dutra</i>	
Evaluation of Collaborative Activities in Medical Simulators Based on Virtual Reality	244
<i>Liliane S. Machado and Ronei M. Moraes</i>	
Virtual Worlds and Education: A Case of Study in the Teaching of Computer Networks Using the Sloodle	248
<i>Felipe Becker Nunes, Samuel Stieler, Gleizer Bierhalz Voss, and Roseclea Duarte Medina</i>	
Context-Aware Virtual Laboratory for Teaching Computer Networks: A Proposal in the 3D OpenSim Environment	252
<i>Gleizer B. Voss, Felipe B. Nunes, Andreia R.K. Mühlbeier, and Roseclea D. Medina</i>	
Methods for Interactive Cut for a Virtual Reality Framework	256
<i>Rubens G. S. Correia and Liliane S. Machado</i>	
FlexDGlove: A Low Cost Dataglove with Virtual Hand Simulator for Virtual Reality Applications	260
<i>Lucas Cassiano Pereira, Rafael Vidal Aroca, and Rummenigge Rudson Dantas</i>	
A Training System to Help Professionals in the Electric Sector in Risky Operations	264
<i>Felipe Gonçalves dos Santos and Iguatemi Eduardo da Fonseca</i>	
Augmented Reality Applied to Health Education	268
<i>Marco Aurélio Galvão and Ezequiel Roberto Zorzal</i>	
Realistic Simulation of Deformation for Medical Training Applications	272
<i>Ana C.M.T.G. Oliveira, Romero Tori, Wyllian Brito, Jéssica Santos, Helton H. Biscaro, and Fátima L.S. Nunes</i>	
Shader Integration in a Virtual Reality Framework	276
<i>Ives Fernando M. S. de Moura and Liliane S. Machado</i>	
Architectural Model for VR and AR Applications in the Cloud	280
<i>Evandro César Freiburger, Ricardo Nakamura, and Romero Tori</i>	
Development of a Genetic Algorithm to Improve a UAV Route Tracer Applied to a Man-in-the-Loop Flight Simulator	284
<i>Gesmar de Paula Santos Júnior, Leonardo Garcia Marques, Milton Miranda Neto, Alexandre Cardoso, Edgard Afonso Lamounier Júnior, and Keiji Yamanaka</i>	

Art Making Using an Haptic Device for Interactive Digital Painting	288
<i>Daniel Valente de Macedo, Herleson Paiva Pontes,</i>	
<i>and Maria Andréia Formico Rodrigues</i>	
Author Index	292