

2012 International Conference on Cyberworlds

(CW 2012)

**Darmstadt, Germany
25 – 27 September 2012**



IEEE Catalog Number: CFP12314-PRT
ISBN: 978-1-4673-2736-7

2012 International Conference on Cyberworlds

CW 2012

Table of Contents

Message from the Chairs.....	ix
Scope of the Conference.....	x
Conference Organization.....	xii
International Program Committee.....	xiii
Reviewers.....	xiv

Full Papers

A Geometrical Data Application of the Cellular Data System	1
<i>Toshio Kodama, Toshiyasu L. Kunii, and Yoichi Seki</i>	
A System Architecture for Flexible Rendering Back-ends in Distributed Virtual Reality Applications	7
<i>Karsten Schwenk, Gerrit Voß, and Johannes Behr</i>	
Analysis of Short Term Path Prediction of Human Locomotion for Augmented and Virtual Reality Applications	15
<i>Thomas Nescher and Andreas Kunz</i>	
Artificial Face Recognition Using Wavelet Adaptive LBP with Directional Statistical Features	23
<i>Abdallah A. Mohamed, Marina L. Gavrilova, and Roman V. Yampolskiy</i>	
Beyond 3D “As-Built” Information Using Mobile AR Enhancing the Building Lifecycle Management	29
<i>Svenja Kahn, Manuel Olbrich, Timo Engelke, Jens Keil, Patrick Riess, Sabine Weibel, Holger Graf, Ulrich Bockholt, and Guillaume Picinbono</i>	
Comparative Study of APIs and Frameworks for Haptic Application Development	37
<i>Dorin M. Popovici, Felix G. Hamza-Lup, Adrian Seitan, and Crenguta M. Bogdan</i>	
Development of Easy-to-Use Authoring System for Noh (Japanese Traditional) Dance Animation	45
<i>Masaki Oshita, Reiko Yamanaka, Masami Iwatsuki, Yukiko Nakatsuka, and Takeshi Seki</i>	
EEG-based Valence Level Recognition for Real-Time Applications	53
<i>Yisi Liu and Olga Sourina</i>	

Emotional Attention in Autonomous Agents: A Biologically Inspired Model	61
<i>Silviano Díaz Barriga, Luis-Felipe Rodríguez, Félix Ramos, and Marco Ramos</i>	
Enhanced Waypoint Graph for Path Planning in Virtual Worlds	69
<i>Nicholas Mario Wardhana, Henry Johan, and Hock Soon Seah</i>	
Preliminary Evaluation of an Augmented Reality Collaborative Process Modelling System	77
<i>Erik Poppe, Ross Brown, Daniel Johnson, and Jan Recker</i>	
Geometric Modeling and Parametric Characterization for Virtual Design of Pharmaceutical Tablets	85
<i>Norhayati Ahmat, Gabriela González Castro, and Hassan Ugail</i>	
Haptic Rendering of Volume Data with Collision Determination Guarantee Using Ray Casting and Implicit Surface Representation	91
<i>Roman Vlasov, Karl-Ingo Friese, and Franz-Erich Wolter</i>	
High Impact Business Modeling through Smart Cloud Computing	99
<i>Tosiyasu L. Kunii, Masaki Hilaga, and Takeshi Miura</i>	
Immersion in Virtual Worlds - But not Second Life!	107
<i>Aslan Kanamgotov, Athanasios Christopoulos, Marc Conrad, and Simant Prakoornwit</i>	
Interactive Distributed Rendering of 3D Scenes on Multiple Xbox 360 Systems and Personal Computers	114
<i>Evangelos Zotos and Rainer Herpers</i>	
Interactive Visualization of Mathematics in 3D Web	122
<i>Danbo Lai and Alexei Sourin</i>	
Leveraging UML and Concept Maps for Constructing Crisis Management Ontology	130
<i>Sergey Mescherin, Igor Kirillov, and Stanislav Klimenko</i>	
Metamodel of Shared Situation Awareness for Resilience Management of Built Environment	137
<i>Igor A. Kirillov, Sergei A. Metcherin, and Stanislav V. Klimenko</i>	
New Ways of Accessing Information Spaces Using 3D Multitouch Tables	144
<i>Eugene Ch`ng</i>	
Responsive Biped Character Stepping: When Push Comes to Shove	151
<i>Ben Kenwright</i>	
Stable Dynamic Algorithm Based on Virtual Coupling for 6-DOF Haptic Rendering	157
<i>Xiyuan Hou and Olga Sourina</i>	
Storytelling with Storyteller Agents in Second Life®	165
<i>Jacquelyn Ford Morie, Eric Chance, Kip Haynes, and Dinesh Purohit</i>	
An Example of a Business Application Using the Search Function of the Cellular Data System	171
<i>Toshio Kodama, Tosiyasu L. Kunii, and Yoichi Seki</i>	
Three Dimensional Sketch for a Landscape Using Morse Theory and Reeb Graphs	178
<i>Kenji Ohmori and Tosiyasu L. Kunii</i>	

Transition to 3D Social Networking	184
<i>Alexiei Dingli, Dylan Seychell, Jonathan Mifsud, Matthew Montebello, and Vanessa Camilleri</i>	
Using Virtual Reality for Interpreter-mediated Communication and Training	191
<i>Panagiotis D. Ritsos, Robert Gittins, Jonathan C. Roberts, Sabine Braun, and Catherine Slater</i>	
vAcademia – Educational Virtual World with 3D Recording	199
<i>Mikhail Morozov, Alexey Gerasimov, and Mikhail Fominykh</i>	
Virtual Palpation for Medical Training in Cyberworlds	207
<i>Shamima Yasmin and Alexei Sourin</i>	
VREAD: A Virtual Simulation to Investigate Cognitive Function in the Elderly	215
<i>Syadiah Nor Wan Shamsuddin, Hassan Ugail, Valerie Lesk, and Elizabeth Walters</i>	
Short Papers	
A Design and Implementation Method for Embedded Systems Using Communicating Sequential Processes with an Event-Driven and Multi-Thread Processor	221
<i>Ryo Mizutani and Kenji Ohmori</i>	
A Video Annotation Tool Using Vision-based AR Technology	226
<i>Satoshi Yonemoto</i>	
An Improved Collaborative Filtering Based on Item Similarity Modified and Common Ratings	231
<i>Wang Weijie, Yang Jing, and He Liang</i>	
Cyber Laboratory for Hardware Logic Experiments: Realizing Real Life Experiences for Many Students at Remote Sites	236
<i>Nobuhiko Koike</i>	
Interaction Prediction for Content Synchronization of Net-based Shared Workspaces	241
<i>Bastian Migge and Andreas Kunz</i>	
User-aware Content Orientation on Interactive Tabletop Surfaces	246
<i>Oliver Schlatter, Bastian Migge, and Andreas Kunz</i>	
Special Session: Applied Visual Computing	
Visual Support System for Selecting Reactive Elements in Intelligent Environments	251
<i>Martin Majewski, Andreas Braun, Alexander Marinc, and Arjan Kuijper</i>	
Fusing Real-Time Depth Imaging with High Precision Pose Estimation by a Measurement Arm	256
<i>Svenja Kahn and Arjan Kuijper</i>	
Interactive Exploration System: A User-Centered Interaction Approach in Semantics Visualizations	261
<i>Dirk Burkhardt, Christian Stab, Martin Steiger, Matthias Breyer, and Kawa Nazemi</i>	
Precomputed Radiance Transfer as a Variance Reduction Technique – A Small Case Study	268
<i>Karsten Schwenk</i>	

Towards Reconstructing a 3D Face Model from an Uncontrolled Video Sequence	273
<i>Jain Lalit Prithviraj, Helmut Seibert, and Arjan Kuijper</i>	
Special Session: Arts, Design and Virtual World	
Abadyl of Tunes - Bring the Noise	278
<i>Michael Johansson</i>	
Cyberarchitecture: A Vitruvian Approach	283
<i>Luis A. Hernández Ibáñez and Viviana Barneche Naya</i>	
Can Darwinian Virtual Objects Behave Well if Left Alone?	290
<i>Dew Harrison and Eugene Ch'ng</i>	
Further Dimensions: Text, Typography and Play in the Metaverse	296
<i>Elif Ayiter</i>	
How Virtual Spaces Re-render the Perception of Reality through Playful Augmentation	304
<i>Martin Reiche and Ulrich Gehmann</i>	
MetaPlastic MetaCoding Art	308
<i>Gianluca Mura</i>	
Meta-tectonics - About the Extension of the Metaphor of Skin(s) in Architecture	316
<i>Edgardo Perez-Maldonado</i>	
Over the Limbo	322
<i>Chiara Passa</i>	
Author Index	326