



Conference Program

PREFACE

We are delighted to present the proceedings of the Symposium on Applied Perception (ACM SAP) held in Los Angeles, USA, August 3-4, 2012. ACM SAP, formerly known as APGV, aims to further the development of inter-disciplinary research that crosses the boundaries between perception and disciplines such as graphics, visualization, vision, haptics and acoustics.

Our ninth annual event provides an intimate, immersive forum for exchanging ideas about areas of overlapping interests. By co-locating ACM SAP 2012 with the thirty-ninth annual SIGGRAPH conference (SIGGRAPH 2012) in Los Angeles, we aim to further promote communication between the core perception and the core computer graphics communities, and also bring back the symposium in its new form to the United States.

This year we received a total of 40 paper submissions. Each submission received between three and four reviews by the 45 members of the International Program Committee. From those reviews and some additional discussions, 21 high quality papers were finally selected for oral presentation at the symposium. Betsy Williams, this year's Posters Chair, additionally selected a number of poster submissions, highlighting late-breaking research in the field.

Following the current arrangement with ACM Transactions on Applied Perception (TAP), five of the best submissions underwent a second review cycle for inclusion in the SAP special issue of the ACM TAP journal. These five submissions were selected by the Program Chairs, based on the quality of the work and also the recommendations made by the reviewers. These papers will appear in the ACM Digital Library as TAP papers at the same time as the symposium takes place. They will not appear in the SAP proceedings in order to avoid double publication.

As always, we greatly appreciate the hard work and dedication of Stephen Spencer, Chair of the ACM SIGGRAPH Publications Committee, who brought these proceedings successfully together. We would also like to thank the TAP editors for their efficiency and helpfulness in ensuring that the selected papers were processed in such a short time frame. Thanks also to Peter Khooshabeh and Matthias Harders, this year's Conference Chairs, for organizing the event. Thanks also to the USC Institute for Creative Technologies for hosting the symposium and our keynote speakers Roberta Klatzky and Paul Debevec.

Finally, we would like to thank everybody else involved in SAP 2012 (especially Carol O'Sullivan, Bobby Bodenheimer, Diego Gutierrez, Roland Fleming, and Katerina Miania who were very quick to answer e-mails and to offer advice at all times), as well as the authors and the committee members. We were honored to be invited and to serve as Program Chairs of SAP 2012, and hope that you will enjoy this year's symposium program.

SAP 2012 Program Chairs

Rachel McDonnell, Trinity College Dublin

Veronica Sundstedt, Blekinge Institute of Technology

SAP 2012 Conference Chairs

Peter Khooshabeh USC Institute for Creative Technologies

Matthias Harders ETH Zurich

SAP 2012 Program Chairs

Rachel McDonnell Trinity College Dublin

Veronica Sundstedt Blekinge Institute of Technology

SAP 2012 Posters Chair

Betsy Williams Vanderbilt University

Friday, 3rd August 2012

08:00-09:00 Registration, Poster Set-up, and Continental Breakfast

09:00-09:15 Opening Remarks

09:15-10:25 **Session 1: Virtual Environments 1: Distance**
Session Chair: Jeanine K. Stefanucci

Stepping over and ducking under: The influence of an avatar on locomotion in an HMD-based immersive virtual environment
Lin Qiufeng, John Rieser, Bobby Bodenheimer

Improvements in Visually Directed Walking in Virtual Environments Cannot be Explained by Changes in Gait Alone
J. Adam Jones, J. Edward Swan II, Gurjot Singh, Sujan Reddy, Kenneth Moser, Chunya Hua, Stephen R. Ellis

To Move or Not to Move: Can Active Control and User-Driven Motion Cueing Enhance Self-Motion Perception ("Vection") in Virtual Reality?
Bernhard E. Riecke, Daniel Feuereissen

10:25-11:00 Coffee Break

11:00-12:15 **Session 2: Faces, Behaviour & Animation**
Session Chair: Eakta Jain

Which Facial Profile Do Humans Expect After Seeing a Front View? - A Comparison with a Linear Face Model
(Published in the SAP special issue of ACM Transactions on Applied Perception)
Matthaeus Schumacher, Volker Blanz

Online Simulation of Emotional Interactive Behaviors with Hierarchical Gaussian Process Dynamical Models
Nick Taubert, Andrea Christensen, Dominik Endres, Martin A. Giese

How Responsiveness Affects Players' Perception in Digital Games
Sophie Jörg, Aline Normoyle, Alla Safonova

Friday, 3rd August 2012

12:15-14:00 Lunch

14:00-15:00 **Keynote 1: Roberta Klatzky**

15:00-15:30 **Poster Fast-Forward**

15:30-16:45 **Coffee Break + Posters Session**

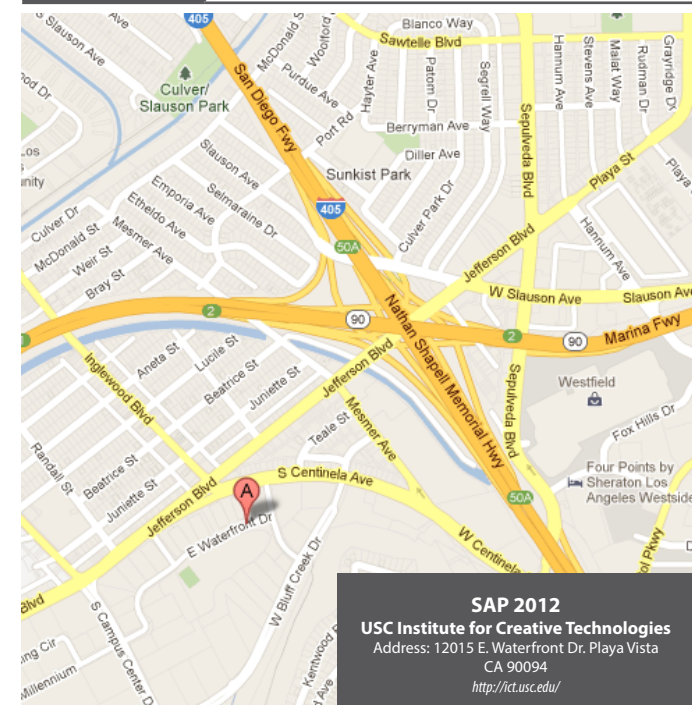
16:45-18:00 **Session 3: Tone Mapping & Rendering**
Session Chair: Erik Reinhard

Single Trial EEG Classification of Artifacts in Videos
(Published in the SAP special issue of ACM Transactions on Applied Perception)
Maryam Mustafa, Stefan Guthe, Marcus Magnor

Dynamic Range Compression by Differential Zone Mapping Based on Psychophysical Experiments
Francesco Banterle, Alessandro Artusi, Elena Sikudova, Thomas Bashford-Rogers, Patrick Ledda, Marina Bloj, Alan Chalmers

Playing with Puffball: Simple Scale-Invariant Inflation for Use in Vision and Graphics
Nathaniel R. Twarog, Marshall F. Tappen, Edward H. Adelson

19:00 Reception



SAP 2012
USC Institute for Creative Technologies
Address: 12015 E. Waterfront Dr. Playa Vista
CA 90094
<http://ict.usc.edu/>

Saturday, 4th August 2012

08:30 - 09:00 **Coffee**

09:00 - 10:00 **Keynote 2: Paul Debevec**

10:10 - 11:00 **Session 4: Gaze in Art**
Session Chair: Greg Ward

Inferring Artistic Intention in Comic Art through Viewer Gaze
Eakta Jain, Yaser Sheikh, Jessica Hodgins

Directing Gaze in Narrative Art
Ann McNamara, Stephen Caffey, Thomas Booth, Cindy Grimm, Srinivas Sridharan, Reynold Bailey

11:00 - 11:30 **Coffee Break + Graphics Lab Tour**

11:30 - 12:40 **Session 5: Virtual Environments 2: Movement**
Session Chair: Bobby Bodenheimer

Minification affects verbal and action-based distance judgments differently in head-mounted displays
(Published in the SAP special issue of ACM Transactions on Applied Perception)
Ruimin Zhang, Anthony Nordman, James Walker, Scott A. Kuhl

Effects of Calibration to Visual and Haptic Feedback on Near-Field Depth Perception in an Immersive Virtual Environment
Bliss M. Altenhoff, Phillip E. Napieralski, Lindsay O. Long, Jeffrey W. Bertrand, Christopher C. Pagano, Sabarish V. Babu, Timothy A. Davis

Evaluating the Accuracy of Size Perception in Real and Virtual Environments
Jeanine K. Stefanucci, David A. Lessard, Michael N. Geuss, Sarah H. Creem-Regehr, William B. Thompson

12:40 - 14:00 **Lunch**

14:00 - 15:15 **Session 6: Eyes & Gaze**
Session Chair: Carol O'Sullivan

Visual saliency and emotional salience influence eye movements
(Published in the SAP special issue of ACM Transactions on Applied Perception)
Yaqing Niu, Rebecca M. Todd, Matthew Kyan, Adam K. Anderson

Multimodal Learning with Audio Description: An Eye Tracking Study of Children's Gaze During a Visual Recognition Task
Krzysztof Krejtz, Izabela Krejtz, Andrew Duchowski, Agnieszka Szarkowska, Agnieszka Walczak

Apparent Resolution Enhancement for Motion Videos
Floraine Berthouzoz, Raanan Fattal

15:15 - 15:45 **Coffee Break**

Saturday, 4th August 2012

15:45 - 17:10 **Session 7: Displays & Stereo**
Session Chair: Andrew Watson

Kinect Based 3D Object Manipulation on a Desktop Display
Mukund Raj, Sarah H. Creem-Regehr, Kristina M. Rand, Jeanine K. Stefanucci, William B. Thompson

Perception of blending in stereo motion panoramas
(Published in the SAP special issue of ACM Transactions on Applied Perception)
Vincent Couture, Michael S. Langer, Sébastien Roy

Mobile Projectors versus Mobile Displays: an Assessment of Task Performance
Tania Pouli, Sriram Subramanian

Analyzing Effects of Geometric Rendering Parameters on Size and Distance Estimation in On-Axis Stereographics
Gerd Bruder, Andreas Pusch, Frank Steinicke

17:10 - 18:00 **Business Meeting**

KEYNOTE SPEAKERS

Keynote 1 - Prof. Roberta Klatzky
Friday, 3rd August 2012 at 14:00-15:00
Title: The Basis for Action is Perception: Natural, Augmented, or Virtual

Keynote 2 - Prof. Paul Debevec
Saturday, 4th August 2012 at 09:00-10:00
Title: Crossing the Uncanny Valley: Achieving Photoreal Digital Actors

In Cooperation with:



POSTERS

Comparability of Narrow and Wide Field-Of-View Head-Mounted Displays for Medium-Field Distance Judgments
J. Adam Jones, Evan A. Suma, David M. Krum, Mark Bolas

Affective Doodle: A Painting Tool Reflecting User Emotion
Masaki Omata, Daisuke Kanuka, Xiaoyang Mao, Atsumi Imamiya

A Comparison of Motion Capture Data Recorded From a Vicon System and a Microsoft Kinect Sensor
Stephen W. Bailey, Bobby Bodenheimer

Evaluating Observers' Sensitivity to Errors in Human and Physical Throws
Michele Vicovaro, Ludovic Hoyet, Luigi Burigana, Carol, O'Sullivan

Perception of qualitative shape from diffuse and specular reflections
Arthur Faisman, Michael S. Langer

Minification and gap affordances in head-mounted displays
James Walker, Ruimin Zhang, Scott A. Kuhl

Distributed Spatial Memory in Virtual Human-Robot Team Scenarios
Xianshi Xie, Julie A. Adams, Timothy P. McNamara, Bobby Bodenheimer

Drawing with the Eyes and Face
Srinivas Sridharan, Yuqiong Wang, Sean Xu, Bharath Rangamannar, Cyprian Tayrien, Stephen Ranger, Reynold Bailey, Joe Geigel

Perceiving Interactive Sketching Through Facial Expressions
José Carlos Miranda, Xenxo Alvarez, José Soleno, A. Augusto Sousa, Irina Fernández, Verónica Orvalho

Comparison of Statistical Methods for Analysis of Affective Haptic Expressions
Yoren Gaffary, Victoria Eyharabide, Jean-Claude Martin, Mehdi Ammi

Effects of Immersion on Spatial Updating in Virtual Panoramas
Phillip E. Napieralski, Bliss M. Altenhoff, Jeffrey W. Bertrand, Lindsay O. Long, Sabarish V. Babu, Christopher C. Pagano, Timothy A. Davis, Georges M. Fadel

A Cognitive Analysis of the Perception of Shape and Motion Cooperation in Virtual Animations
Amel Achour Benallegue, Annie Luciani, Ali Allaoui, Saman Kalantari

Exploring a Virtual Environment by Walking in place using the Microsoft Kinect
Ye Zheng, Matthew McCaleb, Courtney Strachan, Betsy Williams

RECEPTION LOCATION

DoubleTree Hotel. Address: 6161 West Centinela Avenue, Culver City, California, United States 90230-6306; Tel: 1-310-649-1776, Fax: 1-310-649-4411