

Eurographics 2005



Short Presentations

John Dingliana and Fabio Ganovelli (Editors)

Published by
The Eurographics Association,
and The Image Synthesis Group
ISSN 1017, 4656.

The European Association for Computer Graphics
26th Annual Conference

EUROGRAPHICS 2005
Dublin, Ireland
August 29th – September 2nd, 2005

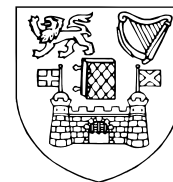
Organized by



EUROGRAPHICS
THE EUROPEAN ASSOCIATION
FOR COMPUTER GRAPHICS



IMAGE SYNTHESIS GROUP



TRINITY COLLEGE DUBLIN
IRELAND

Programme Committee Chairs

Joe Marks (USA & Ireland)
Marc Alexa (Germany)

Conference Chairs

Carol O'Sullivan (Ireland)
Michael McNeill (Ireland)

Short Presentations Chairs

Fabio Ganovelli (Italy)
John Dingliana (Ireland)

STAR Reports Chairs

Marcus Magnor (Germany)
Yiorgos Chrysanthou (Cyprus)

Tutorial Chairs

Ming Lin (USA)
Celine Loscos (UK)

Education Chairs

Jean-Jacques Bourdin (France)
Hugh McCabe (Ireland)

Industrial Programme Chair

Michael Manzke (Ireland)

Animation Chair

Ronan Boulic (Switzerland)

Multimedia Chair

David Murphy (Ireland)

Best Paper Awards Chair

Holly Rushmeier (USA)

Medical Prize Chair

Nigel W. John (UK)

Local Organizing Committee

Helen Byrne-Jacob
Sarah Howlett
Rachel McDonnell
Keith O'Connor

Preface

These proceedings contain the Short Papers for Eurographics 2005, the 26th Conference of the European Association for Computer Graphics, held at Trinity College in Dublin, Ireland, between the 29th of August and the 2nd of September 2005.

The EG Short Presentations were first introduced at Eurographics '98 as a forum for presenting new ideas, late-breaking results and work in progress in a reduced length format. This year, authors present their work in a 10 minute talk at one of the four parallel short paper sessions and additionally as a poster at the combined *Reception for Posters, Animations and Pixar Award*, where the papers can be discussed in an informal atmosphere. As a further change this year, a special prize of EUR 500 sponsored by Science Foundation Ireland will be awarded to the best student short paper, written and presented at the conference by a full-time student.

We received a total of 83 submissions out of which 32 were chosen for publication after a thorough review process, where each paper was reviewed by at least two independent experts in the relevant areas. A number of high-quality submissions could unfortunately not be included due to space and time limitations but we would like to thank all the authors for their valuable contribution to the program.

We would also like to express our gratitude to all the reviewers, the session chairs, and especially to Stefanie Behnke and the staff at TU Braunschweig for all their help during the submission and review process.

We hope that you will enjoy this year's program and we look forward to seeing you all at the Reception.

John Dingliana and Fabio Ganovelli

List of Reviewers

Henrik Aanæs	Heiko Hirschmueller	Domingo Martin Perandrés
Tomas Akenine-Moller	Nicolas Holzschuh	Patrick Perez
Koray Balci	Kai Hormann	Christopher Peters
Bill Baxter	Astrid Kappers	Julien Pettre
Bedrich Benes	Scott King	Gabriel Peyré
Michela Bertolotto	Jan Klein	Frederico Ponchio
Mark Billingham	Grzegorz Krawczyk	Carsten Rother
Volker Blanz	George Leaver	Roy Ruddle
Bobby Bodenheimer	Haeyong Lee	Joerg Schmittler
Ronan Boulic	Richard Lee	Vidya Setlur
Paul Bourke	Brandon Lloyd	Karan Singh
Marco Callieri	Joern Loviscach	Pavel Slavik
Paolo Cignoni	Steve Maddock	Philipp Slusallek
Douglas Cunningham	Maic Masuch	Jiri Sochor
Oliver Deussen	Hugh McCabe	Sara Su
Kate Devlin	Kevin T. McDonnell	Jon Sullivan
Simon Dobbyn	Michael McKeag	Han Qui Sun
Brian Duffy	Cesar Mendoza	Francesca Taponecco
Michael Elad	Stéphane Merillou	Marco Tarini
Magy Seif El-Nasr	Alexandre Meyer	Gwenola Thomas
Jihad El-Sana	Patrick Min	Christian Vogelgsang
Thomas Ertl	Farzin Mokhtarian	Wenping Wang
Sina Farsiu	Derek Molloy	Jon Wilkening
Christian Fuchs	Claudio Montani	Philip Willis
Thanh Giang	Yann Morvan	Yonggao Yang
Pascal Glargdon	Isabel Navazo	Herb Yang
Naga K. Govindaraju	Keith O'Connor	Zeyen Yu
Stephane Grabli	Sageev Oore	Jian J. Zhang
Xavier Granier	Masaki Oshita	Jessica Zhang
John Hamill	Miguel Otaduy	Huang Zhiyong
Matthias Harders	Renata Pajarola	Gernot Ziegler
Adam Hewgill	Sylvain Paris	

Index

SP1a	Meshes	
	Constriction Computation using Surface Curvature	1
	Frank Hétry	
	Real-Time Marching Cubes on the Vertex Shader	5
	Frank Goetz, Theodor Junklewitz, Gitta Domik	
	Fast and Controllable 3D Modelling From Silhouettes	9
	Mukta Prasad, Andrew Fitzgibbon, Andrew Zisserman	
	A Sharpness Dependent Approach to 3D Polygon Mesh Hole Filling	13
	Chun-Yen Chen, Kuo-Young Cheng, H.Y. Mark Liao	
	Scalar Tagged PN Triangles	17
	Tamy Boubekeur, Christophe Schlick, Patrick Reuter	
SP1b	Virtual Artists	
	Carving, Painting, and Printing with a Pen Tablet	21
	Shinji Mizuno, Daigo Kobayashi, Minoru Okada, Junichiro Toriwaki, Shinji Yamamoto	
	Sculpting in Augmented Reality	25
	Jayson Mackie	
	Model-driven Virtual Mezzotint Techniques	29
	Daisuke Tasaki, Shinji Mizuno, Minoru Okada	
SP2a	Motion Control	
	Walking with Pens	33
	Philipp Kolhoff , Jacqueline Preuß, Jörn Loviscach	
	Proactive Steering Toward Oriented Targets	37
	Ronan Boulic	
	Real-time Upper Body 3D Pose Estimation from a Single Uncalibrated Camera	41
	Antonio Salvatore Micilotta, Eng Jon Ong, Richard Bowden	
	Path Planning for Crowds: From Shared Goals to Individual Behaviors	45
	Julien Pettre , Daniel Thalmann,	

SP2b	Images and Video	
	Perception-Based Rendering: Eyes Wide Bleached	49
	Diego Gutierrez, Oscar Anson, Adolfo Munoz, Francisco J. Seron	
	Differential Photon Mapping - Consistent Augmentation of Photographs with Correction of all Light Paths	53
	Thorsten Grosch	
	Video Textures Exploiting Symmetric Movements	57
	William Van Haevre, Frank Van Reeth	
	Image Reconstruction Invariant to Relighting	61
	Todor Georgiev	
SP3a	Rendering Natural Phenomena	
	Real-Time Rendering of Cloudy Natural Phenomena with Hierarchical Depth Impostors	65
	Tamás Ummenhoffer, László Szirmay-Kalos	
	Leaf Cluster Impostors for Tree Rendering with Parallax	69
	Ismael Garcia , Mateu Sbert , László Szirmay-Kalos	
	Rendering Realistic Trees and Forests in Real Time	73
	Alberto Candussi, Nicola Canduss, Tobias Höllerer	
SP3b	Simulation and Modelling	
	Efficient, Physically Plausible Finite Elements	77
	Matthieu Nesme, François Faure, Yohan Payan	
	Predicting Natural Hair Shapes by Solving the Statics of Flexible Rods	81
	Florence Bertails, Basile Audoly, Bernard Querleux, Frédéric Leroy, Jean-Luc Lévêque, Marie-Paule Cani	
	Fast Body-Cloth simulation with moving humanoids	85
	Javier Rodriguez-Navarro, Miguel Sainz, Antonio Susin	
	Facial Motion Cloning Using Global Shape Deformation	89
	Marco Fratarcangeli, Marco Schaerf	
	Progressive Cartesian Inequality Constraints for the Inverse Kinematic Control of Articulated Chains	93
	Manuel Peinado, Ronan Boulic, Benoit Le Calennec, D. Meziat	

SP4a	Immersion and Perception	
	A 3D Perceptual Metric using Just-Noticeable-Difference	97
	Irene Cheng, Pierre Boulanger	
	A Visual Quality Prediction Model for 3D Texture	101
	Irene Cheng, Pierre Boulanger	
	Interactive Manipulation Of Projections With a Curved Perspective	105
	Nisha Sudarsanam, Cindy M Grimm, Karan Singh	
	A Scalable Hardware and Software System for the Holographic Display of Interactive Graphics Applications	109
	Tibor Balogh, Tamás Forgács, Tibor Agács, Olivier Balet, Eric Bouvier, Fabio Bettio, Enrico Gobbetti, Gianluigi Zanetti,	
	Improving the Experience of Scenes with a Large Field of View using Shift Lens Perspective	113
	Aldo Hoeben, Pieter Jan Stappers	
SP4b	Real-Time Rendering	
	Photon Map Gathering on the GPU	117
	Szabolcs Czuczor, László Szirmay-Kalos, László Szécsi , László Neumann	
	Spherical Harmonic Lighting of Wavelength-Dependent Phenomena	121
	Clifford Lindsay, Emmanuel Agu	
	Estimating Mobile Memory Requirements and Rendering Time for Remote Execution of the Graphics Pipeline	125
	Kutty Banerjee, Emmanuel Agu, Fan Wu	

