Preface

For centuries, artists and designers have been creating communicative graphics. With the advent of new forms of media, the emergence of paradigms such as ubiquitous computing, and the rapid evolution of interaction devices, there is a continuous cycle of renewal of the technologies and methods to support artists, interaction designers and developers.

Developing new approaches requires an understanding of the fundamentals of perception and cognition as they relate to interaction and communication technologies, together with artificial intelligence and computer graphics techniques to automate reasoning and enhance cognition. Smart Graphics is in essence an interdisciplinary endeavor and brings together the fields of computer graphics, artificial intelligence, cognitive science, graphic design and fine art.

The International Symposium on Smart Graphics 2008 was held on August 27–29 in Rennes, France. It was the ninth event in a series which originally started in 2000 as an American Association for Artificial Intelligence Spring Symposium and has taken place every year since then. Due to the high quality of the papers submitted this year, the Program Committee decided to accept 17 full papers (instead of the usual 15), 9 short papers and 3 system demonstrations. The acceptance rate for full papers was 34%.

This year’s meeting included a discussion as to the nature of the shape, content and future of the event. Representatives from different communities were invited to give their opinions, and the organizing committee would like to warmly thank them here. Such questions as the ongoing viability of the symposium and the consequences of co-locating Smart Graphics with other larger research events led to interesting debates and have prepared the groundwork for what could be the future of the Smart Graphics conference series.

We would like to thank all authors and speakers for making this year’s event such a success, the reviewers for their careful work, and the program committee for selecting and ordering the contributions for the final program. Special thanks go to the INRIA research institute and to the local organizers of the event (especially Edith Blin and Lena Baudoin) for taking care of all the financial and organizational aspects of the symposium.

August 2008

Andreas Butz
Marc Christie
Brian Fisher
Antonio Krüger
Patrick Olivier
Organization

Organization Committee

Andreas Butz, University of Munich, Germany
Marc Christie, INRIA Rennes, France
Brian Fisher, University of British Columbia, Canada
Antonio Krüger, University of Münster, Germany
Patrick Olivier, Newcastle University, UK

Program Committee

Elisabeth André, University of Augsburg
William Bares, Millsaps College
Marc Cavazza, Teeside University
Sarah Diamond, Ontario College of Art and Design
Stephane Donikian, INRIA Rennes
Steven Feiner, Columbia University
Veronique Gaildrat, IRIT, Paul Sabatier University Toulouse
Knut Hartmann, Flensburg University of Applied Science
Hiroshi Hosobe, National Institute of Informatics, Tokyo
Tsuki Kuffik, University of Haifa
Rainer Malaka, European Media Lab
Jun Mitani, University of Tsukuba
Shigeru Owada, Sony CSL
W. Bradford Paley, Digital Image Design
Bernhard Preim, University of Magdeburg
Thomas Rist, University of Applied Sciences, Augsburg
Shigeo Takahashi, University of Tokyo
Roberto Theron, University of Salamanca
Takafumi Saito, Tokyo University of Agriculture and Technology
Lucia Terrenghi, University of Munich
Massimo Zancanaro, ITC-irst Trento
Michelle Zhou, IBM T.J. Watson Research Center

Secondary Reviewers

Ragnar Bade, University of Magdeburg
Alexandra Baer, University of Magdeburg
Arno Krüger, University of Magdeburg
Konrad Mühlner, University of Magdeburg
Christian Tietjen, University of Magdeburg
Supporting Institutions

The Smart Graphics Symposium 2008 was held in cooperation with Eurographics, AAAI, ACM Siggraph, ACM Siggart and ACM Sigchi. It has been supported by INRIA Rennes - Bretagne Atlantique, CNRS, LINA Laboratory of Nantes, University of Rennes, City of Rennes and Brittany territory.
Table of Contents

Sketching

Pillow: Interactive Flattening of a 3D Model for Plush Toy Design ........................ 1
  Yuki Igarashi and Takeo Igarashi

Using the CAT for 3D Sketching in Front of Large Displays .............................. 8
  Hongxin Zhang, Julien Hadim, and Xavier Granier

MathPaper: Mathematical Sketching with Fluid Support for Interactive Computation ......................................................... 20
  Robert Zeleznik, Timothy Miller, Chuanjun Li, and Joseph J. LaViola Jr.

Navigation and Selection

Intelligent Mouse-Based Object Group Selection ........................................ 33
  Hoda Dehmeshki and Wolfgang Stuerzlinger

Improving 3D Selection in VEs through Expanding Targets and Forced Disocclusion .............................................. 45
  Ferran Argelaguet and Carlos Andujar

Finger Walking in Place (FWIP): A Traveling Technique in Virtual Environments .......................................................... 58
  Ji-Sun Kim, Denis Gračanin, Krešimir Matković, and Francis Quek

Studies and Evaluation

An Empirical Study of Bringing Audience into the Movie ............................. 70
  Tao Lin, Akinobu Maejima, and Shigeo Morishima

Creative Sketches Production in Digital Design: A User-Centered Evaluation of a 3D Digital Environment ...................................................... 82
  Anaïs Mayeur, Françoise Darses, and Pierre Leclercq

Evaluation of an Augmented Photograph-Based Pedestrian Navigation System ................................................................. 94
  Benjamin Walther-Franks and Rainer Malaka

Camera Planning

Representative Views and Paths for Volume Models ...................................... 106
  Pere-Pau Vázquez, Eva Monclús, and Isabel Navazo
## Table of Contents

Real-Time Camera Planning for Navigation in Virtual Environments ........................................ 118  
*Tsai-Yen Li and Chung-Chiang Cheng*

Virtual Camera Composition with Particle Swarm Optimization ............................................. 130  
*Paolo Burelli, Luca Di Gaspero, Andrea Ermetici, and Roberto Ranon*

Through-the-Lens Scene Design ................................................................................................. 142  
*Ye Tao, Marc Christie, and Xueqing Li*

### Visualisation

Similarity-Based Exploded Views ............................................................................................... 154  
*Marc Ruiz, Ivan Viola, Imma Boada, Stefan Bruckner, Miquel Feixas, and Mateu Sbert*

Hardware-Accelerated Illustrative Medical Surface Visualization with Extended Shading Maps ................................................................. 166  
*Christian Tietjen, Roland Pfisterer, Alexandra Baer, Rocco Gasteiger, and Bernhard Preim*

Smart Lenses ................................................................................................................................ 178  
*Conrad Thiede, Georg Fuchs, and Heidrun Schumann*

Overlapping Clustered Graphs: Co-authorship Networks Visualization ........................................ 190  
*Rodrigo Santamaría and Roberto Therón*

### Short Papers

dream.Medusa: A Participatory Performance ........................................................................ 200  
*Robyn Taylor, Pierre Boulanger, and Patrick Olivier*

The Visual Expression Process: Bridging Vision and Data Visualization ...................................... 207  

Flux: Enhancing Photo Organization through Interaction and Automation ................................. 216  
*Dominikus Baur, Otmar Hilliges, and Andreas Butz*

PhotoSim: Tightly Integrating Image Analysis into a Photo Browsing UI ...................................... 224  
*Ya-Xi Chen and Andreas Butz*

Thor: Sketch-Based 3D Modeling by Skeletons ......................................................................... 232  
*Romain Arcila, Florian Levet, and Christophe Schlick*
Table of Contents

Sketch-Based Navigation in 3D Virtual Environments ........................................... 239
   *Benjamin Hagedorn and Jürgen Döllner*

Adaptive Layout for Interactive Documents .......................................................... 247
   *Kamran Ali, Knut Hartmann, Georg Fuchs, and Heidrun Schumann*

Curvature- and Model-Based Surface Hatching of Anatomical Structures Derived from Clinical Volume Datasets ............................................................. 255
   *Rocco Gasteiger, Christian Tietjen, Alexandra Baer, and Bernhard Preim*

Relational Transparency Model for Interactive Technical Illustration ........................ 263
   *Ladislav Čmolík*

**Demos and Posters**

An Interactive Large Graph Visualizer ................................................................. 271
   *Hiroshi Hosobe*

Panel Beat: Layout and Timing of Comic Panels .................................................... 273
   *William Bares*

**Author Index** ........................................................................................................... 277