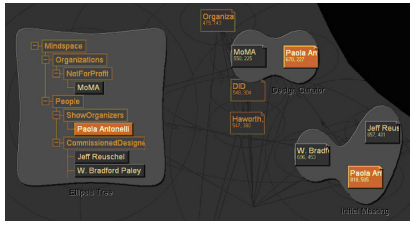
# The Smart Graphics Enterprise

The International Symposium on Smart Graphics will bring together researchers from Computer Graphics, Visualization, Art & Graphics Design, Cognitive Psychology and Artificial Intelligence, all working on different aspects of computer-generated graphics. This year's meeting will be held in Kyoto, Japan.

Advances and breakthroughs in computer graphics have made visual media the basis of the modern user interface, and it is clear that graphics will play a dominant role in the way people communicate and interact with computers in the future. Indeed, as computers become more and more pervasive, and display sizes both increase and decrease, new and challenging problems arise for the effective use and generation of computer graphics.




Recent advances in computer graphics have allowed AI researchers to integrate graphics in their systems, and on the other hand, many AI techniques have matured to the point of being easily used by non specialists. These very techniques are likely to be the vehicle by which both principles from graphic design, and the results of research into cognitive aspects of visual representations will be integrated in next generation graphical interfaces.

# Smart Graphics 2007

In our final wrap up session of Smart Graphics 2006 we identified three key challenges for Smart Graphics:

1. To understand human reasoning with visual representations;
2. In human decision support, to reconcile the complexity of problems that must be solved with the simplicity of representation and interaction that is desired by users;
3. To build systems that can reason about and change their own graphical representations to meet the needs and abilities of their users and the nature of the information they present;

This year's SG will build on this by emphasizing the "smart" in Smart Graphics. This includes human individual, group, and distributed cognition as well as artificial intelligence applied to the design and testing of graphically rich systems. We invite members of the AI and Cognitive Science communities to join with Smart Graphics regulars in submitting papers with a focus on the interaction of cognition and graphics broadly defined: smart design, smart systems, and systems for smart users.

# Symposium Scope

Smart Graphics is grounded in a deep understanding of human abilities, activities, and desires. This understanding arises through the integration of fields such as art, design, and the social, cognitive, and perceptual sciences. Insights are realized in the form of novel methods for producing and interacting with rich graphical displays often utilizing established techniques from Computer Graphics, Artificial Intelligence, and Computer Science in general. Such interfaces present content that

1. engages the user and is aesthetically satisfying,
2. participates in human cognition as external or distributed representations,
3. is sensitive to the real-time demands of the interaction in the context of the available computational resources and
4. adapts the form of the output according to a wider set of constraints such as an individual's perceptual, attentive, and motor abilities and the nature of the presentation media and available interaction devices.

Smart Graphics research can be loosely divided into principles, methods and systems based research, and the symposium will encourage submissions in all these areas, based on the following characterization:

**Principles:**
Characterizing and coping with constraints on technological, computational and human perceptual, cognitive and motor resources; theories of Graphics Design and visual esthetics, theories of graphical representations and interaction; conceptualizations of graphics and interactive systems; representation and reasoning requirements for Smart Graphics; interaction between resource restrictions; design, requirements capture and evaluation methodologies.

**Methods:**
New approaches to the design and testing of graphical generation, presentation and interaction for both conventional desk-top systems and new devices and media; acquisition and representation of design knowledge for Smart Graphics generation; empirical methods in the characterization of interaction; dealing with heterogeneous target media; application of planning, decision theory, optimization, constraint satisfaction, machine learning and other AI techniques to Smart Graphics; attentive systems; evaluation methods.

**Systems:**
The application of Smart Graphics to visualization, virtual reality, augmented reality, mobile communications, wearable computing, graphical hypermedia, novel interaction techniques (e.g. attentive systems, haptic and natural language interaction), and advisory & tutoring systems.

SG07 welcomes submissions from computer graphics, HCI & AI researchers and practitioners, applied philosophers, cognitive scientists, artists and graphic designers.
A partnering event, for which we encourage participation is the 7th Creativity and Cognition Conference (CC2007). Another partner-event is the Visual Computing / Graphics & CAD symposium,which takes place in Osaka, Japan (Jun 23-24).

# Submission Format

The Proceedings of SG07 will be published by Springer within their Lecture Notes in Computer Science series. Authors will find instructions for the preparation of their papers at Springer's Authors' instructions page. SG07 welcomes submissions from computer graphics, HCI & AI researchers and practitioners, cognitive scientists, graphic designers and other related fields in the following categories:

**Full papers:** These will be comprehensive descriptions of original research or design work within the scope of the symposium. They are limited to 12 pages in Springer LNCS style.

**Posters:** These will rather present tentative or preliminary results of research or design work within the scope of the symposium and with more emphasis on the interdisciplinary evaluation of these ideas. Posters will also be included in the proceedings and are limited to 4 pages in Springer LNCS style.

**System demonstrations:** These will be short descriptions of research or design work that the authors intend to show and discuss in a demo session at the symposium. A system description of up to 2 pages in Springer LNCS style will be included in the proceedings.

## Venue

The 7th Symposium on Smart Graphics will take place in Kyoto, Japan.

## Symposium Committees

### Organizing Committee:

Andreas Butz (University of Munich, Germany)
Brian Fisher (Simon Fraser University, Canada)
Antonio Krueger (University of Muenster, Germany)
Patrick Olivier (University of Newcastle Upon Tyne, UK)
Shigeru Owada (Sony CSL)

### Program Committee:

Elisabeth Andre (University of Augsburg)
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Hiroshi Hosobe (National Institute of Informatics, Japan
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Jun Mitani (University of Tsukuba)
W. Bradford Paley (Digital Image Design)
Bernhard Preim (University of Magdeburg)
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Shigeo Takahashi (Univ. of Tokyo)
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)

## Deadlines

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| **Feb 16, 2007** | **Common submission deadline** |
| Mar 16, 2007 | Notification of Acceptance |
| Mar 30, 2007 | Camera ready copy due |

http://www.smartgraphics.org/

Seventh International Symposium on

# Smart Graphics

June 25-27, 2007
Kyoto, Japan

In cooperation with:

Proceedings published by: