IS&T/SPIE
Electronic Imaging
Science and Technology

Call for Papers

Stereoscopic Displays and Applications XX

Part of the IS&T/SPIE 21st Annual Symposium on Electronic Imaging 2009
18-22 January 2009 • San Jose Convention Center • San Jose, CA USA

Conference Chairs: **Andrew J. Woods**, Curtin Univ. of Technology (Australia); **Nicolas S. Holliman**, Durham Univ. (United Kingdom); **John O. Merritt**, The Merritt Group

Program Committee: **Neil A. Dodgson**, Univ. of Cambridge (United Kingdom); **Gregg E. Favalora**, Actuality Medical, Inc.; **Takashi Kawai**, Waseda Univ. (Japan); **Janusz Konrad**, Boston Univ.; **Shojiro Nagata**, Japan 3D Forum/InterVision (Japan); **Vivian K. Walworth**, Jasper Associates; **Chris Ward**, Lightspeed Design, Inc.; **Michael A. Weissman**, TrueVision Systems

This conference focuses on recent advances in stereoscopic imaging, including 3D display hardware, computer software, algorithms, digital techniques, and applications illustrating the user-interface issues or cost/benefit trade-offs of stereoscopic 3D displays. In both real-world and computer-generated imaging applications, stereoscopic 3D display technologies can enhance the user's ability to perceive objects in their correct spatial locations, to move through display space easily, and to identify objects efficiently and accurately. The conference's parallel focus on human factors issues and applications requirements is intended to guide future display system development and task-based evaluation of 3D technologies. The conference brings together practitioners and researchers from industry and academia to facilitate an exchange of current information on stereoscopic imaging topics. Hardware demonstrations of 3D technologies and applications are strongly encouraged at the conference demonstration session. Large-screen stereoscopic projection (both still and video) will be available, and presenters are encouraged to make full use of these facilities during their presentations.

Papers are solicited for, but not limited to, the following topics:

Applications of stereoscopic displays
We are especially interested in novel applications and in user trials of existing applications. Application areas include scientific visualization, medical imaging, teleoperation, telepresence, industrial inspection, communications, entertainment, games, broadcast/cable TV, training, CAD/CAM, molecular modeling, and advertising.

Advances in true three-dimensional display technologies
- autostereoscopic displays, super and high-density multi-view displays, volumetric displays, mobile 3D displays, stereoscopic projection, electro-holographic, and other 3D displays
- methods for recording, playback, transmission, and processing of stereoscopic video
- stereoscopic computer graphics and stereoscopic gaming.

Stereoscopic 3D digital cinema
including production, presentation, and case studies.

Digital stereoscopic imaging
- stereoscopic and multi-view computer graphics
- image processing and compression of stereoscopic imagery
- stereoscopic image synthesis: 2D to 3D conversion, depth map generation, and multi-viewpoint generation
- transmission standards supporting digital stereoscopic images
- software and hardware issues for computer display of stereoscopic images.

3D image acquisition and generation techniques
- single- and multi-lens camera systems
- motion parallax, volume projection, graphical construction, stereoscopic computer graphics, computational photography, and other stereoscopic image generation techniques
- guidelines for stereoscopic content development

Systems design and integration of stereoscopic displays
for teleoperation, telerobotics, telesurgery, augmented reality, virtual reality, consumer and professional broadcast, mobile infrastructure, game systems, including content delivery and interaction technologies

Human factors issues in stereoscopic display systems
- task performance comparisons between stereoscopic and non-stereoscopic displays
- side benefits of stereoscopic display techniques
- evaluation methodologies (e.g., depth-acuity measurement) and task-performance testing
- benefits for processing and compression of stereoscopic images

User-interface issues in stereoscopic display system design
- perceptual and cognitive guidelines for stereoscopic displays
- 3D remote manipulation and control of viewpoint
- ortho-stereo, hyper-stereo, and the geometry of 3D perceptual space

Standards for stereoscopic imaging

This year will mark the 20th Anniversary conference of SD&A - a significant milestone. Several special events are being organized to mark this very special occasion.

Visit the SD&A conference website for more information:
www.stereoscopic.org

Abstract Due Date: 30 June 2008
Final Summary Due Date: 17 November 2008
Manuscript Due Date: 22 December 2008
Electronic Imaging Symposium Dates: 18-22 January 2009

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Submission of Abstracts for IS&T/SPIE's Electronic Imaging 2009

Abstract Due Date: 30 June 2008
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1. By submitting an abstract, I agree to the following conditions:

- An author or coauthor (including keynote, invited, and solicited speakers) will register at the reduced author registration rate, attend the meeting, and make the presentation as scheduled. (Current IS&T and SPIE Members receive an additional discount on the registration fee.)
- Authors and coauthors attending the meeting must obtain funding for their registration fees, travel, and accommodations, independent of IS&T and SPIE, through their sponsoring organizations before submitting abstracts.
- All clearances, including government and company clearance, have been obtained to present and publish. If you are a DoD contractor, allow at least 60 days for clearance.
- IS&T and SPIE are authorized to circulate your abstract to conference committee members for review and selection purposes.
- Accepted abstracts may be published with the printed Final Programs or on a CDRom for distribution at the meeting. Please submit only 250-word abstracts that are suitable for publication.
- Please also submit a 100-word abstract suitable for early release. If accepted, this abstract text will be published prior to the meeting in online or printed programs promoting the conference.
- A full-length manuscript (8-12 pages) for any accepted oral or poster presentation (including keynote, invited, and solicited presentations) will be submitted for publication in the SPIE Digital Library, printed conference Proceedings, and CDRom.

2. Prepare to submit:

- Have all contact information (full names, affiliations, addresses, phone numbers, and emails) for your coauthors ready.
- Only original material should be submitted.
- Abstracts should contain enough detail to clearly convey the approach and the results of the research.
- Commercial papers, papers with no new research/development content, and papers where supporting data or a technical description cannot be given for proprietary reasons should not be submitted, and will not be accepted for presentation in this conference.

3. Submit your abstract online:

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Review, Notification, and Program Placement

- To ensure a high-quality conference, all abstracts will be reviewed by the Conference Chair/Editors for technical merit and suitability of content. Conference Chair/Editors reserve the right to reject for presentation or publication any paper that does not meet content or presentation expectations.
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- Applicants will be notified of abstract acceptance and sent manuscript instructions by e-mail no later than 8 September 2008.
- Final placement in an oral or poster session is subject to the Chairs' discretion. Instructions for oral and poster presentations will be sent to the person marked as Contact Author by e-mail.

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