

IS&T/SPIE 18th Annual Symposium

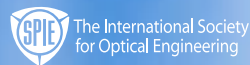
# Electronic Imaging

Science and Technology

15-19 January 2006 San Jose Marriott and San Jose Convention Center • San Jose, California USA

Conferences • Courses • Exhibition

Sponsored by:



*Symposium Chairs:*

**Charles A. Bouman**, Purdue Univ.

**Gabriel G. Marcu**, Apple Computer, Inc.

*Symposium Organizing Committee:*

**Thrasyvoulos N. Pappas**, Northwestern Univ.

**Andrew J. Woods**, Ctr. for Marine Science and Technology/Curtin Univ. of Technology (Australia)

3D Imaging, Interaction,  
and Measurement

Imaging, Visualization,  
and Perception

Image Processing

Digital Imaging Sensors  
and Applications

Multimedia Processing  
and Applications

Visual Communications  
and Image Processing

Optical Security  
and Anti-Counterfeiting

# Call For Papers

IS&T/SPIE 18th Annual Symposium

# Electronic Imaging

**Science and Technology**

15–19 January 2006 San Jose Marriott and San Jose Convention Center • San Jose, California USA

Conferences • Continuing Education • Technical Exhibitions • Demonstrations

## You're Invited!

On behalf of IS&T—The Society for Imaging Science and Technology and SPIE—The International Society for Optical Engineering, we would like to invite you to participate in the 18th annual Symposium on Electronic Imaging: Science and Technology, encompassing 26 technical conferences. The EI Symposium has evolved into the premier international event for exchanging the latest information on new technologies, applications, and solutions in the broad field of electronic imaging.

The EI Symposium reflects the rapid evolution in electronic imaging by combining fundamental areas that have been a part of EI from the beginning, with current hot topic areas, and freshly developing trends. This mixture has allowed the symposium to maintain both breadth and depth, while defining the cutting edge of electronic imaging science and technology.

EI is the premier forum for sharing knowledge about the latest progress and advances in electronic imaging through papers and posters, augmented by state-of-the-art technical courses. The symposium has an excellent track record in fostering synergism between the many research fields in electronic imaging. The breadth of coverage makes the EI Symposium an ideal opportunity for newcomers to catch up in any area of electronic imaging.

A rich assortment of short courses, and panel sessions, allows you to get in-depth knowledge of fundamental principles and the latest trends in electronic imaging. Individual EI conference chairs actively encourage young researchers with new ideas to participate and present, enhancing the vitality of the symposium. Outstanding plenary speakers provide a series of stimulating presentations of broad interest to all attendees.

The EI 2006 technical conferences are complemented by interest group meetings, and technology demonstrations. With its receptions and the down-town San Jose location, the symposium is an excellent opportunity to renew old friendships and network with new contacts. You and your family will also enjoy the vibrant culture and many points of interest in the greater San Francisco area. Make your plans now to join us in San Jose the week of January 15th for this exciting electronic imaging event!

### Critical Dates:

**Abstract Due Date:**  
5 July 2005

**Final Summary (200 words)  
Due Date: 14 November 2005**

**Manuscript Due Date  
for On-Site Proceedings:  
24 October 2005**

**Manuscript Due Date:  
19 December 2005**

*IS&T/SPIE would like to express their deepest appreciation to the symposium chairs, conference chairs, and program committees who have so generously given of their time and advice to make this symposium possible. The symposium, like our other conferences and activities, would not be possible without the dedicated contribution of our participants and members.*

### Symposium Chairs:



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Purdue Univ.



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## Symposium Organizing Committee:

**Thrasylvoulos N. Pappas**, Northwestern Univ.  
**Andrew J. Woods**, Ctr. for Marine Science and Technology/Curtin Univ. of Technology (Australia)

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## Demonstration Chair

**Neil A. Dodgson**, Univ. of Cambridge (United Kingdom)

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**Nasser Kehtarnavaz**, The Univ. of Texas at Dallas  
**Phillip A. Laplante**, The Pennsylvania State Univ.  
**Longin Jan Latecki**, Temple Univ.  
**Peng Li**, GEO-Centers, Inc.  
**Xiaofan Lin**, Hewlett-Packard Labs.  
**Gabriel G. Marcu**, Apple Computer, Inc.  
**Russel A. Martin**, Foveon USA  
**Ian E. McDowall**, Fakespace Labs., Inc.  
**Fabrice Meriaudeau**, Univ. de Bourgogne (France)  
**John O. Merritt**, The Merritt Group  
**Eric L. Miller**, Northeastern Univ.  
**Yoichi Miyake**, Chiba Univ. (Japan)  
**David M. Mount**, Univ. of Maryland/College Park  
**Nasser M. Nasrabadi**, Army Research Lab.  
**Kurt Niel**, Fachhochschule Wels (Austria)  
**Sethuraman Panchanathan**, Arizona State Univ.  
**Thrasylvoulos N. Pappas**, Northwestern Univ.  
**Syed A. Rizvi**, CUNY/College of Staten Island  
**Jonathan C. Roberts**, Univ. of Kent (United Kingdom)  
**Bernice E. Rogowitz**, IBM Thomas J. Watson Research Ctr.  
**Mitchell Rosen**, Rochester Institute of Technology  
**Amir Said**, Hewlett-Packard Labs.  
**Nitin Sampat**, Rochester Institute of Technology  
**Simone Santini**, Univ. of California/San Diego  
**Raimondo Schettini**, DISCo/Univ. degli Studi di Milano-Bicocca (Italy)  
**Nicu Sebe**, Univ. van Amsterdam (Netherlands)  
**Subramania I. Sudharsanan**, Queen's Univ. (Canada)  
**Kazem Taghva**, Univ. of Nevada/Las Vegas  
**Jarmo H. Takala**, Tampereen Teknillinen Yliopisto (Finland)  
**Matthew Tocheri**, Arizona State Univ.  
**Shoji Tominaga**, Osaka Electro-Communication Univ. (Japan)  
**Rudolf L. van Renesse**, VanRenesse Consulting (Netherlands)  
**Ping Wah Wong**, IDzap LLC  
**Andrew J. Woods**, Ctr. for Marine Science and Technology/Curtin Univ. of Technology (Australia)  
**Angela Y. Wu**, American Univ.

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Submit your abstract today!

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## Stereoscopic Displays and Applications XVII (EI101)

*Conference Chairs:* **Andrew J. Woods**, Ctr. for Marine Science and Technology/Curtin Univ. of Technology (Australia); **John O. Merritt**, The Merritt Group; **Neil A. Dodgson**, Univ. of Cambridge (United Kingdom)

*Program Committee:* **Gregg E. Favalora**, Actuality Systems, Inc.; **Nicolas S. Holliman**, Univ. of Durham (United Kingdom); **Shojiro Nagata**, InterVision (Japan); **Steven L. Smith**, VREX Malaysia (Malaysia); **Vivian K. Walworth**, Jasper Associates; **Michael A. Weissman**, Micro Vision Systems Inc.

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### Post Meeting Proceedings Due Dates:

*Abstracts (500 words):* **5 July 2005**

*Final Summary (200 words):* **14 November 2005**

*Manuscripts:* **19 December 2005**

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This conference will focus on recent advances in stereoscopic imaging, covering topics such as 3D display hardware, developments in computer software and digital techniques, and applications that illustrate the user-interface issues and 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 manipulate objects efficiently and accurately. The 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 will bring together practitioners and researchers from industry and academia to facilitate an exchange of current information on stereoscopic 3D techniques and applications. Hardware demonstrations of 3D technologies and applications are strongly encouraged at the conference demonstration session. Facilities for large-screen stereoscopic projection (both still and video) will be available for the presenters.

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, broadcast/cable TV, training, CAD/CAM, molecular modeling, and advertising.
- Advances in stereoscopic display technologies
  - autostereoscopic displays, super and high-density multiview displays, volumetric displays, stereoscopic projection, and other 3D displays
  - methods for recording, playback, transmission, and processing of stereoscopic video
  - stereoscopic computer graphics and stereoscopic gaming

- Digital stereoscopic imaging
  - stereoscopic 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/generation techniques
  - single- and multi-lens camera systems
  - motion parallax, volume projection, graphical construction, stereoscopic computer graphics, and other stereoscopic image generation techniques
  - guidelines for stereoscopic content development
- Design and development of stereoscopic display systems for teleoperation, telerobotics, telepresence, telesurgery, and augmented reality
- 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.

Visit the SD&A conference website for more information: <http://www.stereoscopic.org>

Submit your abstract today!

**electronicimaging.org**

## The Engineering Reality of Virtual Reality 2006 (EI102)

Conference Chairs: **Mark T. Bolas**, Univ. of Southern California; **Ian E. McDowall**, Fakespace Labs., Inc.

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### Post Meeting Proceedings Due Dates:

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*Final Summary (200 words): 14 November 2005*

*Manuscripts: 19 December 2005*

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Virtual and augmented reality systems are evolving. In addition to research, the trend toward real applications continues and practitioners find that technologies and disciplines must be tailored and integrated for specific visualization and interactive applications. This conference serves as a forum where advances and practical advice toward this end is presented and discussed, and where research results can be presented. In addition to the general topic area, the 2006 conference is encouraging the submission of work in the following areas:

- **Industrial Applications:** Systems that solve real-world problems from a wide variety of disciplines are a mainstay of the conference. It especially promotes papers that describe systems which are important because of the problems they solve, and not the technology they use, and papers that describe systems which can quantify their utility. Practitioners in industry are highly encouraged to make submissions.
- **Compelling Experiences:** A compelling immersive experience transports the user to a place that is viscerally felt, not easily forgotten, yet completely synthetic. This requires subtle interplay between the technological and creative arts. Papers that present working systems or ongoing research into the delicate balance between these disciplines are desired.
- **Stubborn Problems:** Interaction, tracking, lag, rendering speed, field of view, resolution B these are but a few of the topic areas which vex the field every year. Papers presenting work improving the state of the art in these areas are encouraged. In addition, the 2006 conference is specifically seeking work that explores manual interaction in 3D environments.

- **Demonstrations:** A half-day joint session with the Stereoscopic Displays and Applications conference provides a welcome forum to present work with additional hands-on demonstrations. Past demonstrations have ranged from optical sub-assemblies to complete products ready for market. If desired, submitted abstracts should indicate interest in demonstration session participation.
- **Late Breaking Progress:** One to two presentations are allotted for exciting 'late breaking' work that is submitted after the formal paper deadline but within a month of the conference date. Papers reporting on work-in-progress, last minute results, or interesting but incomplete findings are welcome for these limited spots.

**Peer Reviewed Papers:** If you would like to submit your paper for a Reviewed Papers Section, please indicate such interest and submit a completed paper, as opposed to a simple abstract, by the abstract due date.

### Critical Dates:

*Abstract Due Date:*

**5 July 2005**

*Final Summary (200 words)  
Due Date:* **14 November 2005**

*Manuscript Due Date  
for On-Site Proceedings:*  
**24 October 2005**

*Manuscript Due Date:*  
**19 December 2005**

## Three-Dimensional Image Capture and Applications VI (EI103)

Conference Chairs: **Brian D. Corner**, U.S. Army Natick Soldier Ctr.; **Peng Li**, GEO-Centers, Inc.; **Matthew Tocheri**, Arizona State Univ.

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### Post Meeting Proceedings Due Dates:

*Abstracts (500 words): 5 July 2005*

*Final Summary (200 words): 14 November 2005*

*Manuscripts: 19 December 2005*

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The Three-Dimensional (3D) Image Capture and Applications conference provides a unique forum for researchers and practitioners of 3D surface imaging and virtual object creation to present their latest work. Topics include 3D surface image capture hardware, image-processing software, object/scene recreation, and applications that utilize the reconstructed 3D objects.

You are invited to submit an abstract of original research or the demonstration of a successful application of 3D image capture methods as a spoken paper or poster. Example topics in 3D image capture equipment, methods, and applications include but are not limited to those listed in this call for papers.

Videos and live demonstrations of prototype systems and products (hardware or software) are encouraged during the technical presentation or as part of the conference demonstration session.

- laser range finding
- stereophotogrammetry
- video image capture
- 3D scene or model reconstruction from video or still camera
- noise removal
- image alignment and merging
- surface scanning of the human body or other organisms
- 3D surface model creation
- 3D models and reverse engineering
- automated data acquisition
- 3D model interrogation and measurement
- 3D scene segmentation and feature extraction
- 3D model archiving and database management
- applications- medical, e-commerce, entertainment, industrial, archeological.

## Human Vision and Electronic Imaging XI (EI105)

*Conference Chairs:* **Bernice E. Rogowitz**, IBM Thomas J. Watson Research Ctr.; **Thrasylvoulos N. Pappas**, Northwestern Univ.; **Scott J. Daly**, Sharp Labs. of America, Inc.

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### Post Meeting Proceedings Due Dates:

*Abstracts (1,000 to 2,000 words):* **5 July 2005**  
*Final Summary (200 words):* **14 November 2005**  
*Manuscripts:* **19 December 2005**

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The goal of this conference is to explore the role of human vision, perception, and cognition in the design, analysis, and use of computer-based image and data systems. Over the years, it has brought together researchers from a wide variety of disciplines, from all over the world, for a rich and lively exchange of ideas. This dialogue is based on the growing understanding that the human observer is a fundamental key to the advancement of image systems, and that advances in these systems and applications stimulate new research into the vision, perception, and cognition of the human observer. Papers are welcome on basic and applied research in:

#### 1) Human perception and cognition

- Models and experimental research
- Psychophysical, neurophysiological, and computational approaches
- Fundamental contributions in spatial, temporal, and color vision
- Fundamental contributions in auditory, haptic, and chemical senses
- Multimodal perception (e.g., spatial/auditory interactions)
- Attention, memory, and learning
- Pattern recognition, visual organization, object perception

#### 2) Color perception and its applications

- Computational and perceptual models of color vision
- Spatial/temporal/color interactions
- Perceptual approaches to device-independent color
- Effective use of color

#### 3) Psychophysical evaluation of image and multimedia quality

- Perceptual and cognitive evaluation of image and video quality
- Perceptual metrics for compression and rendering
- Audio-visual interactions

#### 4) Human vision-based algorithms for:

- Still image and video compression
- Image enhancement and restoration
- Image halftoning and rendering
- Computer graphics and animation

#### 5) Image analysis and perception

- Image semantics, segmentation, and representation
- Perception of shape, texture, and color features
- Perceptual approaches to multimedia retrieval for digital libraries
- Perceptual image and video similarity metrics
- Visually-intuitive navigation through large databases
- Human vision-based approaches to face, gesture, and gait recognition

#### 6) Perceptual issues in visualization and virtual reality

- Interactive exploration of data
- Visual cues for data mining
- Perceptual scaling and visual organization
- Incorporating intelligence into interactive systems

#### 7) Art, aesthetics, and emotion in electronic imaging systems

- Exploiting perception in art
- Emotion and aesthetics in human-computer interfaces

#### 8) Perceptual approaches in life sciences and medical imaging

- Perceptual features for data representation and analysis
- Image rendering and visualization
- Diagnostically-lossless medical image compression

#### 9) Biological vision and comparative physiology

#### 10) Visual prosthesis technology

Conference information may also be found at [www.ece.northwestern.edu/~pappas/hvei](http://www.ece.northwestern.edu/~pappas/hvei)

## Color Imaging XI: Processing, Hardcopy, and Applications (EI106)

*Conference Chairs:* **Reiner Eschbach**, Xerox Corp.; **Gabriel G. Marcu**, Apple Computer, Inc.

*Program Committee:* **A. Ufuk Agar**, Garanti Technologies (Turkey); **Jan P. Allebach**, Purdue Univ.; **Jan Bares**, NexPress Solutions, LLC; **Phil J. Green**, London College of Printing (United Kingdom); **Roger David Hersch**, École Polytechnique Fédérale de Lausanne (Switzerland); **Patrick G. Herzog**, RWTH-Aachen (Germany); **Shoji Tominaga**, Inha Univ. (South Korea); **Michael A. Kriss**, Consultant; **Shaun T. Love**, Lexmark International, Inc.; **Alessandro Rizzi**, Univ. Degli Studi di Milano (Italy); **Shoji Tominaga**, Osaka Electro-Communication Univ. (Japan); **Chris Tuijn**, Agfa-Gevaert NV (Belgium)

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### On-site Proceedings Due Dates:

*Abstracts (500 words):* **5 July 2005**  
*Manuscripts:* **24 October 2005**

*Final Summary (200 words):* **14 November 2005**

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Color imaging is ubiquitous and developing rapidly. The increased availability of computing resources, software, digital cameras, and the increasing usage of the Internet as a medium for exchanging color images and documents, has led to growing interest in color publication of electronic originals. This in turn has promoted development of technologies necessary for affordable color peripherals. In commercial publishing applications, advances in both digital image processing and printing now enable short run color printing to challenge high-quality offset in some sectors. Image transfer between a variety of platforms from initial capture or creation to storage, display, and printing require technology that will preserve image appearance; this is a particular challenge in emerging media such as publishing on the World-Wide Web and on mobile platforms.

- image processing for color input, hardcopy output and electronic publishing: halftoning, data compression and artifact reduction, automatic color correction, image preference processing, visual tolerance, quantization
- color reproduction: spatial aspects of color, color in context, color reproduction across devices, network color management, color appearance, color preference and estimation, chromatic adaptation, computational color science, high dynamic range imaging
- representation and encoding of compound documents: mixed raster content, multiplane imaging models, document compression

## Image Quality and System Performance III (EI107)

- device modeling and characterization: scanners, digital cameras, displays, systems, color models, lookup table methods, color conversion algorithms, gamut mapping, color correction, device limitations, device characterization, methodology, color metrology
- color image encoding and standards: interchange languages, file formats, color encoding, ICC profiles
- multispectral imaging and applications: relevance for real-world paying customers. Note that in 2006 a large Multispectral conference will be held jointly with other EI conferences
- systems and architectures: device independent color implementation in commercial systems, color management, color matching device drivers, system performance, imaging workflow
- technology applications: raster imaging and digital image setting, short run printing, pre-press, color proofing, professional and consumer devices
- print quality: process control, color calibration and measurements on hardcopy systems, hardcopy media and supplies, print attribute preference, image quality assessment
- applications of color hard and soft copy: medical imaging, cartography, fine arts, use of color in documents, new communications media, knowledge delivery.

In deciding where to submit their papers, potential authors are advised to also consider such closely related EI 2006 conferences as the conference on Human Vision and Electronic Imaging and Internet Imaging.

*Conference Chairs:* **Yoichi Miyake**, Chiba Univ. (Japan); **Luke C. Cui**, Lexmark International, Inc.

*Program Committee:* **Peter D. Burns**, Eastman Kodak Co.; **Mark D. Fairchild**, Rochester Institute of Technology; **Susan Farnand**, Eastman Kodak Co.; **Frans Gaykema**, OCE Technologies BV (Netherlands); **Dirk W. Hertel**, Polaroid Corp.; **Robin B. Jenkin**, Cranfield Univ. (United Kingdom); **Steven V. Korol**, Xerox Corp.; **Nathan Moroney**, Hewlett-Packard Co.; **Rene Rasmussen**, Xerox Corp.; **Eric K. Zeise**, NexPress Solutions LLC

### On-site Proceedings Due Dates:

*Abstracts (500 words):* **5 July 2005**

*Manuscripts:* **24 October 2005**

*Final Summary (200 words):* **14 November 2005**

This conference focuses on the study of image quality for electronic system specification, measurement, and design. Application areas include image capture, compression, digital, and conventional printing, display technologies, and video. Papers are welcome on current image quality research and applications including:

### Image quality understanding, measurement, simulation, and modeling

- color and spatial attribute characterization and metrics
- attributes integration and interactions
- image defect simulation
- system level image quality simulation and modeling
- image quality based system tolerancing
- emerging image quality concepts.

### Subjective image quality evaluation and modeling

- psychophysics
- psychometric scaling and modeling
- preference measurement and modeling
- sampling theory and statistics for image quality survey design and analysis
- subjective measurement for vision based modeling evaluation
- web-based image quality survey, measurement, modeling, and management.

### Image quality standards for capture, print, and display

- emerging standards for image quality
- digital versus analogue standards
- performance of existing and proposed standards.

### System performance, measurement, and modeling

- modeling and analysis of advances in image acquisition, sampling, and encoding
- quality of computer-based processing
- extraction of image quality measures from digital images and prints
- instrumentation and industrial measurement systems
- measurement of print and display microstructure (dots, edges, color, resolution, distortion, etc).
- technology dependent characterization (banding, streaking, etc)
- image noise analysis and color error propagation
- methods for system performance benchmarking
- methods for system performance measurement and control
- balancing image quality against cost, features, and reliability.

### Image quality evaluation for other emerging technologies

- multispectral imaging
- image quality assessment for machine recognition
- document layout aesthetics.

When considering whether to submit a paper, potential authors are advised to also consider related conferences on Human Vision and Electronic Imaging, and Color Imaging: Processing, Hardcopy, and Applications.

Submit your abstract today!

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**24 October 2005**

*Manuscript Due Date:*  
**19 December 2005**

## Visualization and Data Analysis 2006 (EI108)

*Conference Chairs:* **Robert F. Erbacher**, Utah State Univ.; **Jonathan C. Roberts**, Univ. of Kent (United Kingdom); **Matti T. Gröhn**, CSC-Scientific Computing Ltd. (Finland); **Katy Börner**, Indiana Univ.

*Cochairs:* **Ming C. Hao**, Hewlett-Packard Labs.; **Pak C. Wong**, Pacific Northwest National Lab.

*Program Committee:* **Uwe Brinkschulte**, Univ. Karlsruhe (Germany); **Philip C. Chen**, Future, Inc.; **L. E. Greenwade**, Idaho National Engineering and Environmental Lab.; **Hans-Georg Pagendarm**, German Aerospace Research Establishment DLR (Germany); **Alex T. Pang**, Univ. of California/Santa Cruz; **Christopher D. Shaw**, Georgia Institute of Technology; **Kalpathi R. Subramanian**, Univ. of North Carolina/Charlotte; **Yinlong Sun**, Purdue Univ.; **J. E. Swan II**, Naval Research Lab.; **Craig M. Wittenbrink**, NVIDIA; **Yingcai Xiao**, Univ. of Akron; **William J. Yurcik**, Univ. of Illinois at Urbana-Champaign

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### Post Meeting Proceedings Due Dates:

*Full papers for review:* **5 July 2005**

*Final Summary (200 words):* **14 November 2005**

*Final Manuscripts:* **19 December 2005**

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This conference covers all aspects of visualization and issues affecting successful visualizations. The conference has grown rapidly over the years and has attracted participants from throughout the world. Submissions are peer reviewed with an acceptance rate of ~50% making the quality of the conference and its publications extremely high. We invite you to contribute quality papers covering research results as well as works-in-progress.

The papers from this conference will be published in a bound Proceedings available from SPIE. Authors of the best papers in the conference will have the option of having extended versions of their papers reviewed for publication in the Journal of Electronic Imaging or a future special issue of the Journal of Electronic Imaging focusing on visualization. Additional information can be found at: <http://vw.indiana.edu/vda2004/>.

Example topics include, but are not limited to:

- Internet imaging, medical imaging, image processing
- biomedical visualization and applications
- Internet, web, and security visualizations
- analysis techniques and data mining
- data exploration using classical and novel approaches
- databases and visualization
- high-performance computing and parallel rendering
- tools and applications exemplified by case studies
- virtual environments and data visualization
- information and scientific visualization
- volume and flow visualization
- interaction paradigms and human factors.

The conference organizers will also accept suggestions on poster-only presentations, panel topics, and suggestions for invited speakers. Full papers for review are due 5 July 2005.

Please contact IS&T/SPIE ([ei@imaging.org](mailto:ei@imaging.org)) or Robert Erbacher ([erbacher@cs.albany.edu](mailto:erbacher@cs.albany.edu)) if you have any questions or require further information.

## Internet Imaging VII (EI109)

*Conference Chairs:* **Theo Gevers**, Univ. van Amsterdam (Netherlands); **Simone Santini**, Univ. of California/San Diego; **Raimondo Schettini**, DISCo/Univ. degli Studi di Milano-Bicocca (Italy)

*Program Committee:* **Jeffrey E. Boyd**, Univ. of Calgary (Canada); **Alberto Del Bimbo**, Univ. degli Studi di Firenze (Italy); **Jennifer Gille**, Raytheon Co.; **Hagit Z. Hel-Or**, Univ. of Haifa (Israel); **Roger David Hersch**, École Polytechnique Fédérale de Lausanne (Switzerland); **Clement H. C. Leung**, Victoria Univ. of Technology (Australia); **Yong Rui**, Microsoft Research; **Simon Shim**, San José State Univ.; **Alain Trémeau**, Univ. Jean Monnet (France); **Luc J. Van Gool**, Katholieke Univ. Leuven (Belgium) and ETH Zürich (Switzerland)

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### On-site Proceedings Due Dates:

*Abstracts (500 words):* **5 July 2005**

*Manuscripts:* **24 October 2005**

*Final Summary (200 words):* **14 November 2005**

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The Internet Imaging conference is an international forum for researchers and practitioners to discuss all aspects of the complex relation between the Internet and imaging techniques. If it is true that we are moving in a post-Gutenberg era (with all the opportunities and the perils involved), the connection between the pervasiveness of the Internet and the semantic richness of images is certainly one of the major propellers of this change.

Many disciplines today are generating data in the form of images, and many communities need to expand the potential basic of attraction of these data by making them available on the internet. In medicine these data can take the form of MRI images, in biology of maps of bacterial cultures, in oceanography of thematic maps of the ocean, and so on. Images and imaging data on the Internet are no longer an appendix to text, but in many case they constitute the primary data to which the Internet users want to gain access. While the basic network infrastructure is available, and today's standards are beginning to be adequate to the task at hand, a lot of system work on the software infrastructure for searching, accessing, and exchanging image data still remains to be done.

This conference is intended as a forum for discussing technologies, applications, and challenges of placing imaging information on the Internet and interacting with it. Special attention will be given to system papers describing new applications or presenting well argued vision statements on potentially revolutionary applications for images and video on the Internet, and on how these applications will take advantage of the opportunities and deal with the challenges of the medium.

Papers are solicited in the following areas:

- peer-to-peer imaging systems for the Internet
- languages for describing and manipulating multimedia data
- video summarization and segmentation for Internet access
- data modeling and representation
- content-based retrieval of images and video on the Internet
- evaluation of imaging systems
- database techniques for content-based search on the Internet
- principles of experimental evaluation of internet imaging systems
- evaluation of practical internet imaging systems
- standards for image and video data (SVG, SMIL, MPEG-7,...)
- image transmission
- image-based user interfaces
- applications: education, telemedicine, cultural heritage, digital libraries, collaborative systems,...
- multimedia presentation on the Internet: media integration, presentation, management, authoring
- web cameras: their impact on video analysis technology, applications
- social and legal issues for images on the Internet, including intellectual property, content rating, watermarking, authentication, non-repudiation, internalization, and varying cultural perception of content
- interactive image creation for the Internet: artistic expression.

## Spectral Imaging: Eighth International Symposium on Multispectral Color Science (MCS)(EI110)

New to  
Electronic Imaging

*Conference Chairs:* **Mitchell Rosen**, Rochester Institute of Technology; **Francisco H. Imai**, Rochester Institute of Technology; **Shoji Tominaga**, Osaka Electro-Communication Univ. (Japan)

*Program Committee:* **Roy S. Berns**, Rochester Institute of Technology; **Jeffrey M. DiCarlo**, Hewlett-Packard Labs.; **Jon Y. Hardeberg**, Gjøvik Univ. College (Norway); **Markku Hauta-Kasari**, Univ. of Joensuu (Finland); **Bernhard Hill**, Univ. Aachen (Germany); **Reiner Lenz**, Linköping Univ. (Sweden); **Yoshitsugu Manabe**, Nara Institute of Science and Technology (Japan); **Yoichi Miyake**, Chiba Univ. (Japan); **Javier Romero**, Univ. de Granada (Spain); **Norimichi Tsumura**, Chiba Univ. (Japan); **Stephen Westland**, Univ. of Leeds (United Kingdom)

### On-site Proceedings Due Dates:

*Abstracts (500 words): 5 July 2005*

*Manuscripts: 24 October 2005*

*Final Summary (200 words): 14 November 2005*

The International Symposium on Multispectral Color Science (MCS) is a floating conference that has been held annually since 1999 in various countries. In 2006 it will take place as a special inter-conference event within the Electronic Imaging Symposium. Prospective authors are invited to present original papers for presentation in any of the technical areas related to the field of spectral imaging and spectral color science. All papers will be reviewed by the scientific committee to ensure that the conference provides significant and timely information to its participants.

Topics of interest include:

- spectral imaging systems
- spectral imaging in the IR and UV
- spectral image acquisition
- spectral image processing
- spectral image analysis
- spectral images within a colorimetric workflow
- spectral-based printing
- spectral image rendering techniques
- spectral image databases
- spectral image encoding and standards
- spectral image compression
- spectral imaging system performance
- spectral error metrics
- spectral image applications (medical, artwork, remote sensing, security, etc...).

Submit your abstract today!

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### Critical Dates:

*Abstract Due Date:*  
5 July 2005

*Final Summary (200 words)  
Due Date: 14 November 2005*

*Manuscript Due Date  
for On-Site Proceedings:  
24 October 2005*

*Manuscript Due Date:  
19 December 2005*

## Real-Time Image Processing III (EI111)

*Conference Chairs:* **Nasser Kehtarnavaz**, The Univ. of Texas at Dallas; **Phillip A. Laplante**, The Pennsylvania State Univ.

*Program Committee:* **Mohamed Akil**, École Supérieure d'Ingénieurs en Électronique et Électrotechnique (France); **Matthias F. Carlsohn**, Computer Vision and Image Communication (Germany); **Carlos R. Castro-Pareja**, Univ. of Maryland/Baltimore; **Luciano F. Costa**, Univ. de São Paulo (Brazil); **Philip P. Dang**, STMicroelectronics; **Xavier Desurmont**, Multitel (Belgium); **Edward R. Dougherty**, Texas A&M Univ.; **Sang-Yong Lee**, Texas Instruments Inc.; **Chang-Joon Park**, Electronics and Telecommunications Research Institute (South Korea); **Gregory Pisanich**, NASA Ames Research Ctr.; **Volodymyr I. Ponomaryov**, Instituto Politécnico Nacional (Mexico); **Fatih M. Porikli**, Mitsubishi Electric Research Labs.; **Raghvinder S. Sangwan**, The Pennsylvania State Univ.; **Feng Xiao**, Agilent Technologies

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### Post Meeting Proceedings Due Dates:

*Abstracts (500 words):* **5 July 2005**

*Final Summary (200 words):* **14 November 2005**

*Manuscripts:* **19 December 2005**

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Real-time imaging involves image processing/analysis where timing constraints are as critical as being logically correct. The Real-Time Image Processing conference is intended to bring together scientists and researchers working in real-time imaging and its applications. The conference provides a forum to become aware of new real-time imaging software and hardware as well as their scientific and industrial applications. Papers are solicited but not limited to the following areas:

- real-time image processing and analysis
- real-time machine vision and inspection
- real-time video surveillance and security
- real-time medical imaging
- real-time imaging hardware
- real-time imaging systems
- real-time industrial applications.

## Image Processing: Algorithms and Systems V (EI112)

*Conference Chairs:* **Edward R. Dougherty**, Texas A&M Univ.; **Jaakko T. Astola**, **Karen O. Egiazarian**, Tampereen Teknillinen Yliopisto (Finland)

*Program Committee:* **Til Aach**, Medical Univ. Lübeck (Germany); **Sos S. Agaian**, The Univ. of Texas at San Antonio; **Junior Barrera**, Univ. de São Paulo (Brazil); **Reiner Creutzburg**, Fachhochschule Brandenburg (Germany); **Paul D. Gader**, Univ. of Florida; **Atanas P. Gotchev**, Tampereen Teknillinen Yliopisto (Finland); **John C. Handley**, Xerox Corp.; **Vladimir V. Lukin**, National Aerospace Univ. (Ukraine); **Stephen Marshall**, Univ. of Strathclyde (United Kingdom); **Françoise J. Prêteux**, Institut National des Télécommunications (France); **Giovanni Ramponi**, Univ. Degli Studi di Trieste (Italy); **Jagath K. Samarabandu**, The Univ. of Western Ontario (Canada); **Akira Taguchi**, Musashi Institute of Technology (Japan)

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### Post Meeting Proceedings Due Dates:

*Extended abstracts (1,000 words),  
or full papers:* **5 July 2005**

*Final Summary (200 words):* **14 November 2005**

*Manuscripts:* **19 December 2005**

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The conference Image Processing: Algorithms and Systems V continues the tradition of the conferences Nonlinear Image Processing and Pattern Analysis in exploring new image processing algorithms. It also reverberates the growing call for integration of the theoretical research on image processing algorithms with the more applied research on image processing systems.

Specifically, the conference aims at highlighting the importance of interaction between linear, nonlinear, and transform-based approaches for creating sophisticated algorithms and building modern imaging systems for new and emerging applications.

The conference chairs and program committee invite high-quality submissions of papers discussing new results in, but not limited to, the following topics:

### Methods

- linear filtering
- morphological filtering
- stack and median-type filtering
- transforms and denoising
- wavelets
- multiresolution
- statistical modeling
- estimation
- fuzzy systems
- neural networks
- genetic and evolutionary computing
- logic-based algorithms
- graph theoretic methods
- interpolation, scaling, morphing

### Applications and Systems in

- machine vision
- visual and multimedia communications
- biomedical image processing
- microarray imaging
- data fusion
- human-machine interaction.

Note: Please follow the submission instructions and submit a 1000-word abstract plus Figures, Tables, etc., clarifying your approach. Full-length manuscript submission (8-12 pages) is highly encouraged in order to help the peer-reviewing process.

## Applications of Neural Networks and Machine Learning in Image Processing X (EI113)

*Conference Chairs:* **Nasser M. Nasrabadi**, Army Research Lab.; **Syed A. Rizvi**, CUNY/College of Staten Island

*Program Committee:* **Pierre Baldi**, California Institute of Technology; **Yoshua Bengio**, Univ. de Montréal (Canada); **Terry M. Caelli**, Curtin Univ. of Technology (Australia); **Rama Chellappa**, Univ. of Maryland/College Park; **Chang Y. Choo**, San José State Univ.; **Sandor Z. Der**, Aerospace Corp.; **Edward R. Dougherty**, Texas A&M Univ.; **Kunihiko Fukushima**, Tokyo Univ. of Technology (Japan); **Erol Gelenbe**, Imperial College London (United Kingdom); **David H. Haussler**, Univ. of California/Santa Cruz; **Nicolaos B. Karayiannis**, Univ. of Houston; **Christof Koch**, California Institute of Technology; **Bart Kosko**, Univ. of Southern California; **Sun-Yuan Kung**, Princeton Univ.; **Richard P. Lippmann**, MIT Lincoln Lab.; **Erkki Oja**, Helsinki Univ. of Technology (Finland); **Sankar K. Pal**, Indian Statistical Institute (India); **Tomaso A. Poggio**, MIT Artificial Intelligence Lab.; **Christoph von der Malsburg**, Univ. of Southern California; **Jacek M. Zurada**, Univ. of Louisville

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### Post Meeting Proceedings Due Dates:

*Abstracts (500 words):* **5 July 2005**

*Final Summary (200 words):* **14 November 2005**

*Manuscripts:* **19 December 2005**

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Recent advances in neural networks and kernel-based learning theory has resulted in a large number of parallel techniques and nonlinear models for real-world applications. Kernel-based learning theory allows one to solve complex nonlinear vision problems using simpler learning algorithms. Kernel-based methods can be used to extend the conventional linear algorithms to nonlinear versions. Kernelization of a large number of image processing algorithms are currently under investigation. Neural networks are parallel arrays of simple processing units that can be used for computationally complex tasks such as image processing, machine vision, and computer vision. Neural network models have been applied in low-level image processing, clustering techniques for image coding, image restoration and reconstruction, nonlinear image filtering, target detection, radar imaging, medical imaging, document analysis, character, signature, face and object recognition. The focus of this conference is on the emerging applications of neural networks and machine learning to image processing. The objective is to bring together researchers in the field of neural networks, machine learning and image processing to exchange ideas on their applications. Papers are solicited in the following areas:

## Computational Imaging IV (EI114)

- applications of neural networks in low-level image processing, filtering, image enhancement, compression segmentation, coding, and image reconstruction
- nonlinear filtering and neural network predictors
- object recognition, target recognition and face recognition
- neural-network-based character recognition, document image processing, medical image processing
- stochastic optimization algorithms applied to vision
- fuzzy clustering, fuzzy neural networks and their applications
- support vector machine, kernel clustering, kernel feature extraction, kernel principal component analysis, kernel-based discriminant analysis algorithms
- kernel-based learning algorithms applied to image processing applications
- Gaussian processes, committee models, Bayesian modeling and parameter estimation, data fusion
- Independent component analysis, blind source decomposition, dimensionality reduction procedures, and neural network clustering
- time-series networks and their applications.

*Conference Chairs:* **Charles A. Bouman**, Purdue Univ.; **Eric L. Miller**, Northeastern Univ.

*Program Committee:* **Thomas S. Denney, Jr.**, Auburn Univ.; **Peter C. Doerschuk**, Purdue Univ.; **Maya R. Gupta**, Univ. of Washington; **Peyman Milanfar**, Univ. of California/Santa Cruz; **Zygmunt Pizlo**, Purdue Univ.; **Stanley J. Reeves**, Auburn Univ.; **Yinlong Sun**, Purdue Univ.; **Yongyi Yang**, Illinois Institute of Technology; **Yibin Zheng**, Univ. of Virginia

### Post Meeting Proceedings Due Dates:

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An ever increasing number of imaging modalities critically depend on computers in the image formation process. Relevant applications arise in fields as diverse as medical imaging, geophysical exploration, environmental monitoring, remote sensing, crystallography, and nondestructive evaluation. The imaging problems in these and related areas are remarkably similar in terms of the algorithmic tools required from disciplines such as computed tomography, inverse methods, statistical estimation, and more traditional image processing tasks such as segmentation, mosaicing, and image modeling. In all cases, the imaging pipelines depend on computationally demanding algorithms for the rendering of high-quality images from the available data. Typically, such computational imaging systems require the solution of inverse problems to determine the desired image or characteristics of the unknown scene.

This conference focuses on algorithms and methods for optimizing the performance and quality of computational imaging methods and systems. The conference emphasizes the interplay between the mathematical theory, physical models, and computational algorithms that make these systems effective. Publications are solicited on topics ranging from fundamental theory to system level implementation. Areas of particular interest include:

### Algorithmic Methods

- inverse methods
- Bayesian estimation methods
- projections onto convex sets (POCS)
- cross validation techniques
- multiscale processing and modeling
- optimization algorithms
- multigrid algorithms
- parameter and hyperparameter estimation
- imaging system modeling and simulation
- processing and validation on field data

### Motivating Problem Classes

- deblurring and high-resolution rendering
- image recovery
- image mosaicing
- image and color transformations
- computed tomography
- positron emission tomography
- confocal microscopy
- synthetic aperture radar
- acoustic imaging
- electrical resistance and impedance imaging
- imaging through scattering media
- optical coherence imaging
- optical diffusion imaging
- crystallography
- inverse problems in image analysis
- inverse problems in vision and perception

### Driving Applications

- medical imaging and image guided surgery
- geophysical exploration
- environmental remediating and monitoring
- nondestructive test and evaluation
- remote sensing
- surveillance, tracking and target identification
- microscopy.

Submit your abstract today!

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*Manuscript Due Date  
for On-Site Proceedings:*  
**24 October 2005**

*Manuscript Due Date:*  
**19 December 2005**

## Vision Geometry XIV (EI115)

*Conference Chairs:* **Longin Jan Latecki**, Temple Univ.; **David M. Mount**, Univ. of Maryland/College Park; **Angela Y. Wu**, American Univ.

*Program Committee:* **Gady Agam**, Illinois Institute of Technology; **Gilles Bertrand**, Groupe ESIEE (France); **Atsushi Imiya**, Chiba Univ. (Japan); **Jack Koplowitz**, Clarkson Univ.; **Nathan S. Netanyahu**, Bar Ilan Univ. (Israel); **Peter Veelaert**, Hogeschool Gent (Belgium); **Xiaodong Wu**, Univ. of Iowa

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### On-site Proceedings Due Dates:

*Abstracts (500 words):* **5 July 2005**

*Manuscripts:* **24 October 2005**

*Final Summary (200 words):* **14 November 2005**

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This conference is designed to bring together researchers who use geometric theory and techniques to solve problems related to computer vision. Regular contributions and session proposals on all geometric or topological topics of computer vision are very welcome, which include but are not limited to:

### Applications of Vision Geometry:

- applications in areas such as manufacturing, security, entertainment, and health care
- discrete geometry in medical imaging
- inspection, surveillance, biometrics, robotics
- analysis of line/engineering drawings
- 3D data and view registration
- virtualized and augmented reality

### Geometry of Digital Images:

- digital geometry and topology (2D and 3D)
- discrete geometry
- approximations of curves and surfaces
- image segmentation in 2D and 3D
- mathematical morphology
- object models, recognition, and features
- invariance and geometric transformations
- surface models and shape recovery

### Multimedia Topics:

- geometric shape representation, modeling, and shape similarity
- geometric methods in video analysis
- geometric problems in 3D reconstruction of the environment (e.g., from the laser range or camera data)

### Computational Geometry:

- complexity of algorithms for vision and image processing
- geometric models of computation
- object recognition and point pattern matching
- convexity problems
- Voronoi diagrams and Delaunay triangulations

Session proposals should include the names and addresses of invited speakers in addition to a short session abstract. It will be the responsibility of session organizers to arrange for abstract submission of all papers presented in their sessions.

## Document Recognition and Retrieval XIII (EI116)

*Conference Chairs:* **Kazem Taghva**, Univ. of Nevada/Las Vegas; **Xiaofan Lin**, Hewlett-Packard Labs.

*Program Committee:* **James Allan**, Univ. of Massachusetts; **Tim L. Andersen**, Boise State Univ.; **Apostolos Antonacopoulos**, The Univ. of Liverpool (United Kingdom); **Elisa H. Barney Smith**, Boise State Univ.; **Brian D. Davison**, Lehigh Univ.; **Xiaoqing Ding**, Tsinghua Univ. (China); **David S. Doermann**, Univ. of Maryland/College Park; **Jianying Hu**, IBM Thomas J. Watson Research Ctr.; **Matthew F. Hurst**, Intelliseek, Inc.; **Hisashi Ikeda**, Hitachi, Ltd. (Japan); **Tapas Kanungo**, IBM Almaden Research Ctr.; **Daniel P. Lopresti**, Lehigh Univ.; **Thomas A. Nartker**, Univ. of Nevada/Las Vegas; **Sargur N. Srihari**, SUNY/Univ. at Buffalo; **George R. Thoma**, National Library of Medicine; **Berrin A. Yanikoglu**, Sabanci Univ. (Turkey)

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### On-site Proceedings Due Dates:

*Abbreviated papers (5-7 pages):* **5 July 2005**

*Manuscripts:* **24 October 2005**

*Final Summary (200 words):* **14 November 2005**

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The fields of document recognition and retrieval have grown rapidly in recent years. This development has been fueled by rising accuracy rates for omnifont and handprint optical character recognition (OCR), decreasing costs for the computational power needed to run such sophisticated algorithms, and the emergence of new application areas such as the World-Wide Web (WWW), digital libraries, and video- and camera-based OCR. The use of OCR is spreading from high-volume, niche domains to more general tasks, including the processing of noisy "real-world" documents, photocopies, and faxes.

Beyond OCR, document recognition includes the recovery of a document's logical structure and format. This encompasses decomposing a document into its various fundamental components (sentences, paragraphs, figures, tables, etc.), tagging these units, and then determining a higher-level structure for the document as a whole. Advanced machine learning techniques may allow one to fully recover the structure of tables and equations and thus understand their content, or the conversion of line drawings from raster to a vector format where the resulting graphical objects are endowed with semantic meaning. Syntactic representation of logical structure (e.g. using grammars) and syntax-directed recognition is another important area where

research contributions are solicited.

One primary reason for digitizing existing paper materials is, of course, to simplify retrieval and organization of information. Therefore we are particularly interested in papers which address any of the following issues: (1) retrieval in the face of corrupted readings of the terms in a document; (2) retrieval based on sketches, images, tables, diagrams or other non-linguistic objects that appear in the document; (3) retrieval based on text appearing with non-standard alignment, in images or graphics; (4) recognition and tagging of mathematical arrays and equations which serve as indicators of subject content or methodology used in the document; (5) novel methods for retrieval and organization of information based on text or other information in a document. Papers addressing retrieval-specific issues are encouraged to use a standard methodology from either statistics (such as the ROC representation) or IR (such as precision versus recall) to assess the effectiveness of proposed techniques against the endpoint goal of correct recognition and retrieval of the entire document, or a section thereof.

Papers are solicited in the following areas:

### Recognition

- algorithms and systems for machine-printed and handwritten character and word recognition, especially for degraded documents (e.g., faxes or old/historical documents)
- large-scale conversion of historical document collections
- quality assurance methods and systems in DRR
- character and word segmentation techniques
- identification and analysis of tables or equations
- page segmentation, including hierarchical decomposition of documents into text regions, colored/textured background, halftones, line-art, etc.
- logical structure analysis, linguistic representation of structure and syntax-directed recognition of logical structure
- raster-to-vector conversion of line-art, maps, and technical drawings
- filtering and enhancement techniques for document images
- document image compression
- document degradation models
- video- and camera-based OCR
- applications of document recognition to the WWW and digital libraries
- techniques to support spoken language access to document text (audio browsing of document databases)
- multilingual character recognition
- other topics relating to document analysis and character recognition.
- document analysis and synthesis for digital

## Digital Publishing (EI126)

New to  
Electronic Imaging

publishing (template reuse and layout generation for new contents)

### Retrieval

- impact of recognition accuracy on retrieval effectiveness
- recovery and use of logical structure for retrieval
- information extraction from forms
- relevance feedback techniques for document retrieval
- cross-language and multi-lingual retrieval
- categorization of text documents and imaged documents
- summarization of text documents and imaged documents
- keyword spotting in document images
- approximate string matching algorithms for OCR text
- non-textual retrieval methods
- image and multimedia search
- interfaces for retrieval
- benchmarking and evaluation issues
- other topics relating to the retrieval of documents and document images.

Note: submissions to Document Recognition and Retrieval XIII should be abbreviated papers (5-7 pages). The paper should be informative and address the following questions: i) What is the paper about? ii) What is the original contribution? iii) What is the most closely related work by others and how does this work differ? iv) How can others make use of this work? v) What are the main experimental/theoretical results? Full papers (10-12 pages) will be needed for the final Proceedings.

### Critical Dates:

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*Manuscript Due Date*  
*for On-Site Proceedings:*  
24 October 2005

*Manuscript Due Date:*  
19 December 2005

*Conference Chairs:* Jan P. Allebach, Purdue Univ.; Hui Chao, Hewlett-Packard Co.

*Program Committee:* Kathrin Berkner, Ricoh Innovations, Inc.; Charles A. Bouman, Purdue Univ.; David F. Brailsford, Univ. of Nottingham (United Kingdom); Richard Furuta, Texas A&M Univ.; Steven J. Harrington, Xerox Corp.; Yuukou Horita, Toyama Univ. (Japan); Charles Jacobs, Microsoft Corp.; Dhiraj Kacker, Caslon & Co.; John Lumley, Hewlett-Packard Ltd. (United Kingdom); Lisa Purvis, Xerox Corp.; Fernando Vega, Univ. de Puerto Rico Mayagüez; Fabio Vitali, Univ. degli Studi di Bologna (Italy)

### Post Meeting Proceedings Due Dates:

*Abstracts (500 words):* 5 July 2005

*Final Summary (200 words):* 14 November 2005

*Manuscripts:* 19 December 2005

The innovation in computer, Internet, and printing technologies has forever changed the traditional publishing industry; it has changed how documents are created, published, distributed, and accessed. Publishing is becoming much more dynamic. Advancements in document creation software allows people to be more creative and to publish their own work. Information is delivered through the Internet and displayed on different viewing devices and in various forms. Web-to-print enables new printing paradigms and business models, allowing printers to accept jobs around the world. Digital presses make it possible to have short runs and to make every copy unique for custom printing such as personalized marketing materials and photo albums.

All these opportunities have introduced new imaging challenges. Automatic formatting or reconfiguring documents for different devices requires an intelligent publishing platform, from content preparation and management, to solution delivery. Increasing demands for custom printing and web-to-printing services require automatic content recipient matching; automatic composition with consistent look and feel; accurate branding for stationary and marketing pieces; intelligent preflight tools; and optimized streamlined workflow systems. There are also questions such as how to measure and automatically create aesthetically appealing documents, how much of artistic design and branding can be facilitated through mathematics and engineering, and how to link and transform documents across different

formats.

The goal of this conference is to bring together researchers, developers, application, and solution designers from academia, government, and industry to exchange ideas about the problems they are facing and to discuss recent and innovative solutions. Papers are solicited in all areas of digital publishing, including, but not limited to:

### Document Content:

- content preparation, selection, modification, and reuse for cross-platform publishing
- digital rights management

### Document style:

- template, style, branding extraction and reuse
- aesthetic measure of a layout
- aesthetics driven layout

### Database publishing:

- database publishing systems
- data mining driven variable data printing
- content management systems
- CRM for direct marketing
- template design in database publishing

### Document composition:

- document auto-layout algorithms and applications
- document auto-reconfiguration
- document composition tools and user interface
- human computer interaction in document design and composition

### Publishing tools and systems:

- publishing architectures and platforms for custom printing
- preflight tools
- proofing: soft and local proof, printed document artifact measures in proofing.
- document optimization for printing
- font and color management tools
- time, resource, and cost estimation

### Workflow:

- publishing workflows and their management
- printing job scheduling and optimization
- distributed publishing.

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## Sensors, Cameras, and Systems for Scientific/Industrial Applications VIII (EI117)

*Conference Chair:* **Morley M. Blouke**, Ball Aerospace & Technologies Corp.

*Program Committee:* **Erik Bodegom**, Portland State Univ. and Technische Univ. Delft (Netherlands); **Robin M. Dawson**, Sarnoff Corp.; **Terrence S. Lomheim**, The Aerospace Corp.; **Gloria G. Putnam**, Eastman Kodak Co.; **Alice L. Reinheimer**, E2V Technologies, Inc.; **Nobukazu Teranishi**, Matsushita Electric Industrial Co., Ltd. (Japan); **Orly Yadid-Pecht**, Univ. of Calgary (Canada)

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### Post Meeting Proceedings Due Dates:

*Abstracts (500 words):* **5 July 2005**

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Solid state optical sensors and solid state cameras have established themselves as the imaging systems of choice for many scientific and industrial applications. The advantages of low-power, low-noise, high-resolution, high-geometric fidelity, broad spectral sensitivity, and extremely high quantum efficiency have lead to a number of revolutionary uses.

This conference will focus on current work in the areas of solid state detectors, solid state cameras, and novel applications with emphasis given to the following subjects:

- large format and mosaic imagers for astronomical and medical applications
- high frame rate sensors for adaptive optics, plasma diagnostics, confocal microscopy, motion capture, and neural imaging
- CCDs, CIDs, and CMOS sensors and camera integration
- HDTV cameras and sensors
- new and novel processes for making CCD and CMOS arrays
- system-on-chip solutions for smart sensors and applications
- CMOS process and design enhancements for next generation active pixel sensors
- low-power imagers for portable applications
- color imaging sensors and cameras with improved dynamic range and resolution

- linear arrays used in cameras for industrial and airborne applications
- color and hyperspectral imaging sensors and sensor systems
- amorphous and polycrystalline silicon arrays for non-destructive test and medical imaging
- active pixel sensors and cameras
- smart sensors and applications
- sensors and cameras enhanced for increased UV and IR response
- e-beam, x-ray, EUV, and charge particle arrays and applications
- novel imaging devices and applications.

You are invited to submit papers on any of the above or related topics.

## Digital Photography II (EI118)

*Conference Chairs:* **Nitin Sampat**, Rochester Institute of Technology; **Jeffrey M. DiCarlo**, Hewlett-Packard Labs.; **Russel A. Martin**, Foveon USA

*Program Committee:* **Eiji Atsumi**, Nokia Japan Co., Ltd. (Japan); **Ted J. Cooper**, Sony Electronics Inc.; **Michael A. Kriss**, Consultant; **Jingqiang Li**, Agilent Technologies, Inc.; **Ricardo J. Motta**, PIXIM, Inc.; **Gloria G. Putnam**, Eastman Kodak Co.; **John R. Reinert Nash**, Lifetouch, Inc.; **Sabine E. Süssstrunk**, Swiss Federal Institute of Technology (Switzerland)

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### Post Meeting Proceedings Due Dates:

*Abstracts (500 words):* **5 July 2005**

*Final Summary (200 words):* **14 November 2005**

*Manuscriptmer* **2005**

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Digital photography is experiencing explosive growth both in the consumer and professional markets. Digital camera sales have exceeded multi-use film camera sales for several years, and in 2004, cell-phone camera sales exceeded both digital and film camera sales combined. Due to the many advances, by way of new component technologies and image processing techniques that have been made of late, digital photography has become a reality for consumers and professionals alike.

This conference serves to bring together researchers, scientists, and engineers working in the imaging field to describe recent progress in digital photography and all its relevant areas, from capture, processing, color, compression, transmission and applications, to photo-finishing and hard and soft output.

Papers are solicited in the following areas:

#### Image sensor technologies

- CCD and CMOS image sensor advancements
- CFA (color filter array) architectures
- sensor characterization
- signal conditioning and pixel processing

#### Camera processing technologies

- autofocus and autoexposure algorithms
- illuminant estimation and correction
- demosaicing
- image enhancement algorithms
- tone correction and color correction
- sharpening and noise reduction
- compression standards and implementations

#### System and workflow technologies

- rendering algorithms
- profiling techniques
- color management
- colorimetric, preferred and high dynamic range reproductions
- soft and hard copy renderings
- archiving techniques

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## Machine Vision Applications in Industrial Inspection XIV (EI119)

### Mobile imaging technologies

- cell-phone and PDA cameras
- size, power, and processing issues
- storage, distribution, display and printing
- mobile imaging standards

### Applications and solutions

- home printing
- digital photo-finishing
- image kiosks
- on-line photo services
- embedded imager platforms

### Standards

- image communications
- ISO speed, MTF, and color image encodings
- image storage technologies
- file formats and image metadata
- sensor characterization

### Microprocessor and silicon solutions

- processor requirements
- silicon chipset and platform solutions
- integration and future advancements.

*Conference Chairs:* **Fabrice Meriaudeau**, Univ. de Bourgogne (France); **Kurt Niel**, Fachhochschule Wels (Austria)

*Program Committee:* **Pierrick T. Bourgeat**, BioMedIA Lab. (Australia); **Luciano da Fontoura Costa**, Univ. de São Paulo (Brazil); **Marc M. Ellenrieder**, Daimler Chrysler AG (Germany); **Steven P. Floeder**, 3M Co.; **David Fofi**, Univ. de Bourgogne (France); **Ralph M. Ford**, The Pennsylvania State Univ.; **Edmund Y. Lam**, The Univ. of Hong Kong (Hong Kong China); **Katia Lebart**, Heriot-Watt Univ. (United Kingdom); **Dinesh Nair**, National Instruments; **Paul L. O'Leary**, Montan Univ. Leoben (Austria); **A. Ravishankar Rao**, IBM Thomas J. Watson Research Ctr.; **Joaquim Salvi, Sr.**, Univ. de Girona (Spain); **Hamed Sari-Sarraf**, Texas Tech Univ.; **Christoph Stiller**, Univ. Karlsruhe (Germany); **Kenneth W. Tobin, Jr.**, Oak Ridge National Lab.; **Yvon Voisin**, Univ. de Bourgogne (France)

### Post Meeting Proceedings Due Dates:

*Abstracts (500 words):* **5 July 2005**

*Final Summary (200 words):* **14 November 2005**

*Manuscripts:* **19 December 2005**

The goal of this conference is to bring together real-world practitioners and laboratory researchers in machine vision to share recent applications and developments. Topics of interest include the integration of imaging sensors, supporting hardware, computers, and algorithms for manufacturing inspection, characterization, and/or control. The decreased cost of computational power and vision sensors has motivated the rapid proliferation of machine vision technology in a variety of industries. Examples of such industries include aluminum, automotive, forest products, textiles, glass, steel, metal casting, and chemicals. Other industries, such as semiconductor and electronics manufacturing, have been employing machine vision technology for several years. For both new and existing industrial users of machine vision, there are numerous innovative methods to improve productivity, quality, and compliance with product standards.

There are several broad problem areas that have received significant attention in recent years. For example, some industries are collecting enormous amounts of image data from product monitoring systems. New and efficient methods are required to extract insight and to perform process diagnostics based on this historical record. Regarding the physical scale of the measurements, microscopy techniques are nearing resolution limits in fields such as semiconductors, biology, and other nano-scale technologies. Techniques such as resolution enhancement, model-based methods, and statistical imaging may provide the means to extend these systems beyond current

capabilities. Furthermore, obtaining real-time and robust measurements in-line or at-line in harsh industrial environments is a challenge for machine vision researchers, especially when the manufacturer cannot make significant changes to their facility or process.

Abstracts are sought that are related to both novel applications of existing methodology and/or new algorithms or techniques. Abstracts are encouraged from, but not limited to, the following list of topics:

- image processing algorithms and applications
- image-related pattern recognition techniques and applications
- image-related data mining and knowledge discovery
- three-dimensional imaging (stereo, structure-from-motion, laser range finding)
- thermal, color, and/or spectroscopic imaging algorithms and applications
- novel hardware designs
- vision system architectures
- imaging and inspection in harsh environments
- machine vision for process control/diagnosis, trend analysis, or preventative maintenance
- high-throughput systems for medical or biological applications
- case studies on the impact of machine vision in manufacturing
- machine vision applications for industrial research and development.

Abstract submissions should be ~500 words in length and should contain all of the following information: (1) a clear problem statement and motivation for the work, (2) methods, (3) experimental results (these may be preliminary), and (4) a summary or conclusion. Submissions that do not meet these requirements will not be considered. All abstracts will be peer reviewed. Papers of exceptional quality will be invited to submit revised, extended drafts to the IS&T/SPIE *Journal of Electronic Imaging*.

### Critical Dates:

*Abstract Due Date:*  
**5 July 2005**

*Final Summary (200 words)  
Due Date:* **14 November 2005**

*Manuscript Due Date  
for On-Site Proceedings:*  
**24 October 2005**

*Manuscript Due Date:*  
**19 December 2005**

## Multimedia Computing and Networking 2006 (EI120)

In cooperation with **ACM SIGMultimedia**



**Conference Chairs:** **Surender Chandra**, Univ. of Notre Dame; **Carsten Griwodz**, Univ. of Oslo (Norway)

**Program Committee:** **Tarek F. Abdelzaher**, Univ. of Virginia; **Sarita V. Adve**, Univ. of Illinois at Urbana-Champaign; **Scott A. Brandt**, Univ. of California/Santa Cruz; **David H. Du**, Univ. of Minnesota; **Wu-chi Feng**, Oregon Health and Science Univ.; **Pål Halvorsen**, Univ. of Oslo (Norway); **Baochun Li**, Univ. of Toronto (Canada); **Ian Marsh**, Swedish Computer Science Institute (Sweden); **Andreas U. Mauthe**, Lancaster Univ. (United Kingdom); **Ketan D. Mayer-Patel**, The Univ. of North Carolina System; **Klara Nahrstedt**, Univ. of Illinois at Urbana-Champaign; **Wei-Tsang Ooi**, National Univ. of Singapore (Singapore); **Ragunathan Rajkumar**, Carnegie Mellon Univ.; **Karsten Schwan**, Georgia Institute of Technology; **Tajana Simunic Rosing**, Hewlett-Packard Co.; **Nalini Venkatasubramanian**, Univ. of California/Irvine; **Dongyan Xu**, Purdue Univ.; **Roger Zimmermann**, Univ. of Southern California; **Michael Zink**, Univ. of Massachusetts/Lowell

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### On-site Proceedings Due Dates:

Full papers for review: **5 July 2005**

Final Manuscripts: **24 October 2005**

Final Summary (200 words): **14 November 2005**

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The objective of this conference is to bring together researchers and practitioners contributing to all facets of multimedia computing and networking. We especially encourage full and original papers on emerging technologies such as residential broadband networks and digital appliances, multimedia and QoS support for 3G and ad hoc networks, multimedia in P2P environments, sensor networks and grids, power-aware computing and communications, mobile and fixed wireless multimedia networks and content distribution networks. We will specially feature industrial design experiences and showcase tools for next-generation multimedia systems and applications. Presenters will be encouraged to make multimedia presentations and demonstrate their solutions in person.

Papers are solicited in all areas of multimedia, including, but not limited to:

### Multimedia Networking

- home, mobile and broadband networks
- QoS control and scheduling
- push technologies, content distribution, and other emerging access technologies
- Internet data streaming, delivery, and wide-area caching
- sensor networks for multimedia
- grid use for multimedia

### Measurement and Modeling

- performance measurement of multimedia systems
- statistical modeling of server traffic and server software
- multimedia system simulations and benchmark comparisons

### Multimedia Computing

- multimedia OS services
- power-aware systems
- video-on-demand services
- peer-to-peer media systems
- development tools

### Case Studies and Applications

- entertainment and networked games
- distributed virtual reality
- multimedia authoring.

Authors are invited to submit both research and industrial papers on original, unpublished work describing current research and novel ideas in the area of multimedia computing and networking. Papers whose contributions are supported by experimental evaluations are strongly encouraged. Paper submissions should not exceed 15 single-spaced, single column pages including figures, tables, and references, using a typeface no smaller than 10 points. Full papers and a 500-word text abstract that includes your topic area must be submitted through the meeting website at [www.electronicimaging.org](http://www.electronicimaging.org)

MMCN meeting information may also be found at <http://www.ifi.uio.no/mmcn2006>

## Security, Steganography, and Watermarking of Multimedia Contents VIII (EI121)

**Conference Chairs:** **Edward J. Delp III**, Purdue Univ.; **Ping Wah Wong**, IDzap LLC

**Program Committee:** **Adnan M. Alattar**, Digimarc Corp.; **Mauro Barni**, Univ. degli Studi di Siena (Italy); **Jeffrey A. Bloom**, Sarnoff Corp.; **Gordon W. Braudaway**, IBM Corp.; **Ingemar J. Cox**, Univ. College London (United Kingdom); **Jana Dittmann**, Otto-von-Guericke-Univ. Magdeburg (Germany); **Ahmet M. Eskicioglu**, CUNY/Brooklyn College; **Jessica Fridrich**, Binghamton Univ.; **Teddy Furon**, IRISA (France); **Ton Kalker**, Hewlett-Packard Co.; **Martin Kutter**, AlpVision SA (Switzerland); **Reginald L. Lagendijk**, Technische Univ. Delft (Netherlands); **Benoît B. Macq**, Univ. Catholique de Louvain (Belgium); **Bangalore S. Manjunath**, Univ. of California/Santa Barbara; **Nasir D. Memon**, Polytechnic Univ.; **Pierre Moulin**, Univ. of Illinois at Urbana-Champaign; **Fernando Pérez-González**, Univ. de Vigo (Spain); **Gaurav Sharma**, Univ. of Rochester; **Claus Vielhauer**, Otto-von-Guericke-Univ. Magdeburg (Germany); **Sviatoslav V. Voloshynovskiy**, Univ. de Genève (Switzerland); **Min Wu**, Univ. of Maryland/College Park

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### Post Meeting Proceedings Due Dates:

Abstracts (500 words): **5 July 2005**

Final Summary (200 words): **14 November 2005**

Manuscripts: **19 December 2005**

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The availability of multimedia contents in digital form, as well as the growth in popularity of communications channels such as the worldwide web and wireless systems, has brought a number of security issues to the forefront. This includes copyright protection, ownership assertion, authentication, access control, and secure communications. The importance of these issues has promoted research and innovative applications of secure technologies such as security protocols, cryptography, digital signature, digital watermarking, time stamping, smart card technology, data hiding and steganography, forgery detection, biometrics, and others.

This conference provides an excellent opportunity for researchers and practitioners to present their work, as well as to keep abreast with the latest developments in security, steganography, and watermarking technologies for multimedia contents including text, audio, graphics, still image, and video.

Submit your abstract today!

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## Multimedia Content Analysis, Management, and Retrieval 2006 (EI122)

Areas of interest include, but are not limited to:

- security architectures for multimedia contents
- server/client security protocols and systems
- smart card security systems
- secure publishing systems
- cryptography and digital signatures for multimedia
- watermarking technologies and algorithms
- forensic imaging algorithms and systems
- attacks on watermarks
- applications and benchmarking of watermarks
- implementations of security and watermarking systems
- steganography and data hiding
- forgery detection
- legal implications of watermarking and/or security systems
- content protection
- digital rights management (DRM) systems
- biometrics
- standardization aspects (e.g., MPEG IPMP and MPEG-21).

This year we will have Special Sessions on the following topics:

- benchmarking and demonstrations of systems
- watermarking security
- multimedia forensics
- natural language watermarking
- biometrics
- applications (with emphasis on non-image, non-audio, non-video methods)

We will also have a special 2 hour “rump session” one evening where anyone will be allowed to have 5 minutes to present a new idea or concept for discussion.

Authors will be required to submit a 2,500 word abstract for review.

Authors are also encouraged to submit papers that involve demonstrations of their work.

*Conference Chairs:* **Edward Y. Chang**, Univ. of California/Santa Barbara; **Nicu Sebe**, Univ. van Amsterdam (Netherlands); **Alan Hanjalic**, Technische Univ. Delft (Netherlands)

*Program Committee:* **Kiyoharu Aizawa**, The Univ. of Tokyo (Japan); **Aya Aner-Wolf**, GenTech Corp. (Israel); **Noboru Babaguchi**, Osaka Univ. (Japan); **Nozha Boujemaa**, INRIA Rocquencourt (France); **Arbee L. P. Chen**, National Chengchi Univ. (Taiwan); **Tsuhhan Chen**, Carnegie Mellon Univ.; **TatSeng Chua**, National Univ. of Singapore (Singapore); **Ajay Divakaran**, Mitsubishi Electric Research Labs.; **Chitra Dorai**, IBM Thomas J. Watson Research Ctr.; **Arun Hampapur**, IBM Thomas J. Watson Research Ctr.; **Alexander G. Hauptmann**, Carnegie Mellon Univ.; **Alejandro Jaimés**, Fuji Xerox Co., Ltd. (Japan); **Mohan S. Kankanhalli**, National Univ. of Singapore (Singapore); **John R. Kender**, Columbia Univ.; **Anil C. Kokaram**, The Univ. of Dublin, Trinity College (Ireland); **Michael S. Lew**, Leiden Institute of Advanced Computer Science (Netherlands); **Chung-Sheng Li**, IBM Corp.; **Rainer W. Lienhart**, Univ. of Augsburg (Germany); **Wei-Ying Ma**, Microsoft Research Asia (China); **Bernard Merialdo**, Institut Eurécom (France); **Kadir A. Peker**, Mitsubishi Electric Research Labs.; **Silvia Pfeiffer**, Commonwealth Scientific & Industrial Research Organisation (Australia); **Alan F. Smeaton**, Dublin City Univ. (Ireland); **John R. Smith**, IBM Thomas J. Watson Research Ctr.; **Hari Sundaram**, Arizona State Univ.; **Ahmet M. Tekalp**, Univ. of Rochester; **Qi Tian**, The Univ. of Texas at San Antonio; **Svetha Venkatesh**, Curtin Univ. of Technology (Australia); **Stephen T. C. Wong**, Harvard Medical School; **Marcel Worring**, Univ. van Amsterdam (Netherlands); **Aidong Zhang**, SUNY/Univ. at Buffalo

### On-site Proceedings Due Dates:

*Abstracts (500 words): 5 July 2005*

*Manuscripts: 24 October 2005*

*Final Summary (200 words): 14 November 2005*

Recent advances in computing, communications and storage technology have made multimedia data become prevalent. Multimedia has gained enormous potential in improving the processes in a wide range of fields, such as advertising and marketing, education and training, entertainment, medicine, surveillance, wearable computing, biometrics, and remote sensing. Rich content of multimedia data, built through the synergies of the information contained in different modalities, calls for new and innovative methods for modeling, processing, mining, organizing, and indexing of this data for effective and efficient searching, retrieval, delivery, management and sharing of multimedia content, as required by the applications in the above mentioned fields. The aim of this conference is to bring together the researchers who are developing such methods, and the users, who are defining the needs for such methods.

It is our intention to make this conference a premium forum for quality papers addressing the research challenges and applications related to

multimedia content analysis, management and retrieval. We are soliciting high-quality submissions that:

- present novel and fresh ideas
- question existing paradigms and unwritten rules
- introduce brave new research directions in the following (and other related) areas:

### Content Analysis

- image, audio and video characterization (feature extraction)
- fusion of text, image, video and audio data
- semantic image/video/audio classification
- multimedia semantics modeling
- image, video and audio similarity measures
- unconstrained object and face detection/recognition
- low- and high-level temporal video segmentation
- benchmarking of content analysis methods and algorithms
- generic methods and algorithms for content analysis and semantics modeling
- affective content analysis

### Content Search/Browsing/Retrieval

- multimedia mining
- active learning and relevance feedback techniques
- query models, paradigms, and languages for multimedia content retrieval
- browsing and visualization of multimedia data sets
- user interfaces for multimedia databases
- search issues in distributed and heterogeneous systems, meta-search engines
- benchmarking of search, browsing and retrieval methods and algorithms
- generation of video summaries and abstractions

### Content Management and Delivery

- multimedia databases
- efficient peer-to-peer storage and search techniques
- indexing and data organization
- system optimization for search and retrieval
- storage hierarchy, scalable storage

### Applications

- personalized multimedia
- media commerce
- biomedical media databases
- multimedia and bioinformatics
- user-friendly multimedia
- news and entertainment
- surveillance
- wearable computing
- management of meeting/presentation recordings
- biometrics
- threat assessment, military and civilian security applications.

The conference program will include invited keynote presentations, invited special sessions, and a panel of experts who will be discussing the remaining research challenges related to multimedia content analysis, management, and retrieval.

## Embedded Processors for Multimedia and Communications III (EI123)

*Conference Chairs:* **Subramania I. Sudharsanan**, Queen's Univ. (Canada); **Michael Bove, Jr.**, MIT Media Lab.; **Sethuraman Panchanathan**, Arizona State Univ.

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### Post Meeting Proceedings Due Dates:

*Abstracts (500 words):* **5 July 2005**

*Final Summary (200 words):* **14 November 2005**

*Manuscripts:* **19 December 2005**

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Progress in electronics and increasing consumer demand have brought in interesting possibilities for embedded processors in a variety of platforms. Highly integrated mobile devices with multimedia capabilities to powerful set-top boxes are prime examples of such embedded processor applications. These embedded processors depending on the market cover a space from highly tailored, low-cost solutions to flexible, powerful multichip solutions.

We solicit papers for this conference that span design, analysis, programming, system architecture, and application aspects of such embedded processors.

Topics to be covered include, but are not limited to:

- processors for mobile phones, PDAs, digital cameras, and portable media devices
- computational aspects of multimedia message handling
- networked and distributed media processing
- single chip integration of mobile phone processing elements
- low-power architectures
- configurable processors for embedded applications
- digital TV processors that handle communications, source decode, and post-processing
- set-top box designs including home media gateways and digital video recorders
- 2D and 3D Graphics processors for DTV, set-top box, and gaming applications
- DVD playback and recordable processors
- novel CCD imaging and processing systems
- application of configurable processors for media and communications
- benchmarking and performance evaluation of embedded processors
- trade-off analysis among hardwired, programmable, and configurable approaches.

## Multimedia on Mobile Devices II (EI124)

*Conference Chairs:* **Reiner Creutzburg**, Fachhochschule Brandenburg (Germany); **Jarmo H. Takala**, Tampereen Teknillinen Yliopisto (Finland); **Chang Wen Chen**, Florida Institute of Technology

*Program Committee:* **Barry A. T. Brown**, Univ. of Glasgow (United Kingdom); **Alan Chalmers**, Univ. of Bristol (United Kingdom); **Surender Chandra**, Univ. of Notre Dame; **Kenneth J. Crisler**, Motorola Labs.; **David S. Doermann**, Univ. of Maryland/College Park; **Uwe Dummann**, Siemens AG (Germany); **Elizabeth Dykstra-Erickson**, Kinoma, Inc.; **Lajos Hanzo**, Univ. of Southampton (United Kingdom); **Zhihai He**, Univ. of Missouri/Columbia; **Jamil Khan**, Massey Univ. (New Zealand); **Sethuraman Panchanathan**, Arizona State Univ.; **Timo Pulli**, Nokia; **Matthias Rauterberg**, Technische Univ. Eindhoven (Netherlands); **Phillip A. Regalia**, Institut National des Télécommunications (France); **Haitao Zheng**, Microsoft Research Asia (China)

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### Post Meeting Proceedings Due Dates:

*Abstracts (500 words):* **5 July 2005**

*Final Summary (200 words):* **14 November 2005**

*Manuscripts:* **19 December 2005**

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The goal of this conference is to provide an international forum for presenting recent research results on multimedia for mobile devices, and to bring together experts from both academia and industry for a fruitful exchange of ideas and discussion on future challenges.

Submissions are solicited on, but not limited to, the following topics on mobile and ubiquitous multimedia:

- multimedia signal processing and modern compression for mobile devices
- streaming mobile multimedia
- new compression techniques for mobile devices
- novel energy efficient architectures and algorithms for mobile multimedia
- protocols and algorithms to cope with mobility, roaming, limited bandwidth, or intermittent connectivity for mobile multimedia
- case studies, field trials, and evaluations of new applications and services for mobile multimedia
- HCI, interaction design and techniques, user-centered studies for mobile devices

- wearable computers
- new displays for mobile and ubiquitous multimedia
- intelligent, aware, proactive, and attentive environments, perception, sensing, and modeling of the environment
- middleware and distributed computing support for mobile and ubiquitous multimedia
- power issues when transmitting multimedia content
- mobile healthcare
- mobile computer graphics
- mobile games and entertainment
- novel adaptive/context-aware/mobile/ubiquitous/ ambient/wireless multimedia applications and systems
- m-commerce and m-learning systems.

Submit your abstract today!

**electronicimaging.org**

## Video Communications and Image Processing

### Visual Communications and Image Processing 2006 (EI127)

*Conference Chairs:* **John G. Apostolopoulos**, Hewlett-Packard Labs.; **Amir Said**, Hewlett-Packard Labs.

*Program Committee:* **Kiyoharu Aizawa**, The Univ. of Tokyo (Japan); **Yucel Altunbasak**, Georgia Institute of Technology; **Alan C. Bovik**, The Univ. of Texas at Austin; **Chang Wen Chen**, Florida Institute of Technology; **Charles D. Creusere**, New Mexico State Univ.; **Gerard de Haan**, Philips Research Labs. (Netherlands); **Edward J. Delp III**, Purdue Univ.; **Eric Dubois**, Univ. of Ottawa (Canada); **Frederic Dufaux**, **Touradj Ebrahimi**, Emitall S.A. (Switzerland); **Onur G. Guleryuz**, DoCoMo Communications Labs. USA, Inc.; **T. Russell Hsing**, Telcordia Technologies, Inc.; **Janusz Konrad**, Boston Univ.; **Alex C. Kot**, Nanyang Technological Univ. (Singapore); **C.-C. Jay Kuo**, Univ. of Southern California; **Reginald L. Lagendijk**, Technische Univ. Delft (Netherlands); **Shipeng Li**, Microsoft Research Asia (China); **Yi Liang**, Qualcomm; **Bangalore S. Manjunath**, Univ. of California/Santa Barbara; **Sanjit K. Mitra**, Univ. of California/Santa Barbara; **Antonio Ortega**, Univ. of Southern California; **Sethuraman Panchanathan**, Arizona State Univ.; **William A. Pearlman**, Rensselaer Polytechnic Institute; **Fernando M. B. Pereira**, Instituto Superior Técnico (Portugal); **Béatrice Pesquet-Popescu**, École Nationale Supérieure des Télécommunications (France); **Fatih M. Porikli**, Mitsubishi Electric Research Labs.; **Majid Rabbani**, Eastman Kodak Co.; **Kannan Ramchandran**, Univ. of California/Berkeley; **Dan Schonfeld**, Univ. of Illinois at Chicago; **Thomas Sikora**, Technische Univ. Berlin (Germany); **Eckehard G. Steinbach**, Ludwig-Maximilians-Univ. München; **Robert L. Stevenson**, Univ. of Notre Dame; **Thomas Stockhammer**, Technische Univ. München (Germany); **Huifang Sun**, Mitsubishi Electric Research Labs.; **Ming-Ting Sun**, Univ. of Washington; **Andrew G. Tescher**, AGT Associates; **Bhaskaran Vasudev**, Epsom Palo Alto Lab.; **John W. Woods**, Rensselaer Polytechnic Institute

#### On-site Proceedings Due Dates:

*Extended abstracts (3-4 pages):* **5 July 2005**

*Manuscripts:* **24 October 2005**

*Final Summary (200 words):* **14 November 2005**

Visual Communications and Image Processing have become important engineering areas that attract interdisciplinary research interest. This conference is designed as a forum for presenting important research results as well as applications. Original and unpublished material is solicited on the following and related topics:

- media coding: image, video, graphics, and object-based coding, emerging coding standards, e.g. MPEG-4, AVC/H.264, MPEG SVC, JPEG-2000, JPIP, JPSEC, JPWL, very-low bit rate coding, high-quality image/video/graphics coding, 3D coding
- media over networks: media streaming, video over 802.11 and 3G wireless networks, error resilience, scalability, quality of service, cross-layer optimization for improved media delivery, streaming media content delivery networks
- image/video processing: filtering, interpolation, (e.g. deinterlacing, frame-rate conversion), restoration, compressed-domain processing, superresolution, multimodal media processing
- multiresolution analysis, subbands, wavelets
- object segmentation and tracking, feature extraction
- synthetic imaging and rendering: stereo, multiview and 3D video, synthetic image/video and graphics representations, 3D and animated 3D models, virtual reality
- application systems: DTV, digital cinema, multimedia content retrieval, man-machine interface, imaging/video surveillance
- media system design: hardware and software architectures and implementation issues
- scalable computations, low-power implementations
- multimedia information security
- other timely topics related to image and video communication and processing.

Please submit paper proposals of 3-4 pages in length, including problem statement, review of prior work, proposed approach, and experimental results.

Similar to prior VCIP's, this year's conference will include a Young Investigator Award and a Best Student Paper Award, with details to be provided soon.

### Critical Dates:

*Abstract Due Date:*  
**5 July 2005**

*Final Summary (200 words)  
Due Date:* **14 November 2005**

*Manuscript Due Date  
for On-Site Proceedings:*  
**24 October 2005**

*Manuscript Due Date:*  
**19 December 2005**

## Optical Security and Counterfeit Deterrence Techniques VI (EI125)

*Conference Chair:* **Rudolf L. van Renesse**, VanRenesse Consulting (Netherlands)

*Program Committee:* **Sara E. Church**, Bank of Canada (Canada); **James M. Jonza**, 3M Co.; **Malcolm R. M. Knight**, De La Rue International Ltd. (United Kingdom); **Ian M. Lancaster**, Reconnaissance International (United Kingdom) and International Hologram Manufacturers Association (United Kingdom); **Robert A. Lee**, Commonwealth Scientific & Industrial Research Organisation (Australia); **Hiroyuki Matsumoto**, NHK Spring Co., Ltd. (Japan); **Roger W. Phillips**, Flex Products, Inc.; **Elisabeth Schulz**, European Central Bank (Germany); **Sybrand Spanenburg**, Joh. Enschedé Security Printing B.V. (Netherlands); **Wayne R. Tompkin**, OVD Kinegram Corp. (Switzerland)

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### Post Meeting Proceedings Due Dates:

*Abstracts (500 words):* **5 July 2005**

*Final Summary (200 words):* **14 November 2005**

*Manuscripts:* **19 December 2005**

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The increasing threat of document fraud and product piracy calls forth unceasing and worldwide R&D efforts on security features and fraud deterrent strategies. These efforts are paramount for successful future security techniques and strategies. Novel ideas are developed in research laboratories, and the acquired experience and knowledge need to be presented to the security community. Communication of these advancements through a centralized medium is a necessity to efficiently convey the current level of understanding of the field as a whole to this security community.

The objective of this 6th two-day Conference on Document Security and Counterfeit Deterrence Techniques is to bring together researchers, manufacturers and users of security devices and systems. This conference will review security policy and technologies, present technical and scientific papers on current advances in optical, opto-electronic and electronic imaging security as well as survey novel technologies for application in future security devices.

The conference will include an evening Topical Exhibit on real-world security problems and solutions. This exhibit is an occasion for contributors to show their work and material in the field of document and product security in an informal ambience.

Papers are solicited in the following and related areas:

- counterfeit and forgery deterrent measures and strategies
- product piracy and product diversion deterrent measures and strategies
- security design measures and strategies
- human factors design of security features and secure documents
- evaluation of security devices and security systems
- document security features and systems
- product authentication features and systems
- card, label, and tag security technology
- validation/authentication detection devices
- opto-biometric identification technology
- standards and commonality for machine readable security features.

## Symposium Demonstration Session

### Expanded Demonstration Program for EI 2006

Conference Chair: **Neil A. Dodgson**, Univ. of Cambridge (United Kingdom)

The highly-successful, interactive, hands-on demonstration of stereoscopic hardware, software, and display—traditionally a component of the Stereoscopic Display and Applications Conference—will be expanded this year to include research demonstrations and products related to the entire Electronic Imaging Symposium.

The annual demonstration, which has previously showcased the largest and most diverse collection of stereoscopic research and products in one location, is now open to all EI 2006 symposium attendees and commercial entities working in the realm of electronic imaging!

The EI 2006 Demonstration Session represents a unique networking opportunity, a time when attendees can see the latest research in action, compare commercial products, ask questions of technically knowledgeable demonstrators, and even make purchasing decisions about a range of EI products. The Demonstration Session is scheduled to take place over a three hour period in conjunction with the Symposium Poster Session.

### Conference Authors

All EI 2006 conference authors may request one complimentary half-table space to demonstrate hardware or software in support of their conference presentation; requests for space must include details on how the demonstration relates to the accepted paper. **All author requests must be received by 15 November 2005; requests received after that date will be subject to a \$100 fee.** Tables are not transferable and, while we will make every effort to accommodate all demonstrators, are subject to availability.

### Non-Authors

Non-authors (or EI authors wishing to demonstrate a product not related to their presentation), including individuals, businesses, and companies, may purchase a half-table for \$250 or 8 × 8-foot space for \$500 by November 15, 2005, on a space-available basis. After that date, rates increase to \$375 and \$750, respectively. (Please inquire for special exhibit/demonstration session rates.)

Space is limited. Priority will be given to speakers and companies in support of technical presentations and assigned on a first come/first served basis. Late requests will be considered only if sufficient space is still available. A simple contract is required for participation and EI reserves the right to impose a no show fee of \$50 for individuals and \$200 for corporate entities.

For further information or to register for the Symposium Demonstration Session, please contact IS&T (info@imaging.org) and put "EI Demonstration" in the subject line; all interested authors will be contacted by IS&T with further information after their papers have been accepted.

Please note that there will not be a separate Stereoscopic Displays and Applications Demonstration Session at the 2006 conference.

## Invitation to Instructors Submit Your Course Proposal

Teaching is an excellent way to share your expertise with Electronic Imaging colleagues, as well as to meet new colleagues, renew professional relationships, and establish business contacts.

EI 2006 is in search of short course instructors. If you have an idea for a course and would like to be considered as an instructor, please submit your name, complete contact information, and proposed course title and description to the Short Course Chairs by July 3, 2005.

Proposals must include:

- a detailed course description (2 to 4 pages) that outlines the scope and focus of the course, addresses potential overlap issues, and describes the history of the course as applicable (e.g. an update of a course taught at EI 2005; a new class; etc.)
- a list of 4 to 6 measurable and specific learning objectives describing what the student should be able to do at the conclusion of the class
- a statement of who the intended audience is in terms of their job function, and/or training needs; also state any prerequisites
- a brief (max. 50 words) biographical sketch outlining your education and work experience as it relates to your qualifications to present on this topic
- course notes and bibliography (if available).

*Proposal Due Date: July 3, 2005*  
Submit to: ei@electronicimaging.org

*Short Course Chairs:*  
**Edward J. Delp III**, Purdue Univ.  
**Michael A. Kriss**, Consultant

### Critical Dates:

*Abstract Due Date:*  
**5 July 2005**

*Final Summary (200 words)*  
**Due Date: 14 November 2005**

*Manuscript Due Date*  
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**24 October 2005**

*Manuscript Due Date:*  
**19 December 2005**

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**electronicimaging.org**

## General Information

### Registration

Registration fees for conferences and short courses, a registration form, and technical and general information for Electronic Imaging 2006 will be available in the Advance Technical Program.

#### Participant Registration Fee

Authors and coauthors are accorded a reduced symposium registration fee.

### Advance Technical Program

Available in October 2005.

The comprehensive Advance Technical Program for this symposium will list conferences, paper titles, and authors in order of presentation; education program schedule, including course descriptions and instructor biographies; an outline of all planned special events; and information detailing the hotel reservations process. All those who submit an abstract will receive a copy, or contact SPIE or IS&T to request a copy.

### Hotel Accommodations

Information concerning hotel reservations, as well as a hotel reservation form, will be included in the Advance Technical Program available in October 2005.

### Exhibit at Electronic Imaging 2006

Exhibit your products and services at the only West Coast venue for the full range of imaging components, devices, and systems. Electronic Imaging 2006 will attract, in one location, the world's leading scientists, researchers, product and process design engineers, product developers, and system integrators.

Companies interested in exhibiting at this symposium may contact the Exhibitions Department at IS&T headquarters, +1 703 642 9090. Fax: +1 703 642 9094, E-mail: info@imaging.org.

## About the Symposium Organizers



IS&T, the Society for Imaging Science and Technology, is an international non-profit dedicated to keeping members and others apprised of the latest developments in fields related to imaging science through conferences, educational programs, publications, and its website. IS&T encompasses all aspects of imaging, with particular emphasis on digital printing, electronic imaging, color science, photofinishing, image preservation, silver halide, pre-press technology, and hybrid imaging systems.

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### About the IS&T/SPIE Electronic Imaging Technical Group

Electronic imaging encompasses diverse research, engineering, and specialized applications of electronic imaging devices or systems. Because of the diverse topical areas within electronic imaging, the technical group is divided into six subgroups that cover image processing, image capture, display and hardcopy, system integration, visualization, and low-light instrumentation. Application areas are just as far-reaching. They include industrial automation, graphic arts, aerospace sensing, remote sensing, high-resolution television, optimal fiber tele-imaging, document processing, medical imaging, and all areas of digital image processing, including restoration, compression, and analysis.

Joint sponsorship by the IS&T and SPIE provides even more benefits and contacts for members of the technical group through the close partnership of the two societies. Both IS&T and SPIE members may join the technical group at the member rate of just \$15 per year.

#### Technical group benefits include:

- a twice-yearly newsletter covering events in the field
- an annual directory of members
- discounts on conference registration fees
- discounts on selected publications, including the SPIE/IS&T copublished quarterly *Journal of Electronic Imaging*.

**Contact SPIE or IS&T for more information or an application.**

## Request Your Copy of the Technical Program.

Here's how:

1. Submit an abstract. Persons who submit an abstract will automatically receive a copy of the program.
2. Request an Advance Technical Program. Only those who submit an abstract or request a program will receive one.

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- On-site Proceedings are published in advance for distribution at the meeting. Manuscripts for onsite books are due 12 weeks before the meeting.
- Post-meeting Proceedings are published approximately 6 to 8 weeks after the meeting. Manuscripts are due 4 weeks before the meeting.

## Electronic Imaging

Science and Technology

Abstract Due Date: 5 July 2005

- Manuscript Due Date for On-site Proceedings: 24 October 2005
- Manuscript Due Date for Post-meeting Proceedings: 19 December 2005

Final Summary Due Date: 14 November 2005

ALL DUE DATES MUST BE STRICTLY OBSERVED

### IMPORTANT!

Submissions imply the intent of at least one author to register, attend the symposium, present the paper (either orally or in poster format), and submit a full-length manuscript for publication in the conference Proceedings.

All authors (including invited or solicited speakers), program committee members, and session chairs are responsible for registering and paying the reduced author, session chair, program committee registration fee. (Current IS&T or SPIE Members receive a discount on the registration fee.)

### Web

You are **STRONGLY ENCOURAGED** to submit abstracts using the "submit an abstract" link at: [www.electronicimaging.org](http://www.electronicimaging.org)

Submitting directly on the Web ensures that your abstract will be immediately accessible by the conference chair for review through MySPIE, the author/chair web site.

Please note! When submitting your abstract you must provide contact information for all authors, summarize your paper, and identify the **contact author** who will receive correspondence about the submission and who must submit the manuscript and all revisions. Please have this information available before you begin the submission process.

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4. **PRINCIPAL AUTHOR'S BIOGRAPHY** Approximately 50 words.
5. **ABSTRACT TEXT** Please see individual Call for Papers for Submission requirements.
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### Final Summary

Accepted authors will receive instructions for the 200-word final summary. The final summaries will be published and available at the meeting.

### Conditions of Acceptance

- **Authors are expected to secure funding for registration fees, travel, and accommodations, independent of IS&T/SPIE, through their sponsoring organizations before submitting abstracts.**
- Only original material should be submitted.
- Commercial papers, papers with no new research/development content, and papers where supporting data or a technical description cannot be given for proprietary reasons will not be accepted for presentation in this symposium.
- Abstracts should contain enough detail to clearly convey the approach and the results of the research.
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### Review, Notification, Program Placement

- To ensure a high-quality conference, all abstracts and Proceedings manuscripts will be reviewed by the Conference Chair/Editor for technical merit and suitability of content. Conference Chair/Editors may require manuscript revision before approving publication, and reserve the right to reject for presentation or publication any paper that does not meet content or presentation expectations. SPIE/IS&T's decision on whether to accept a presentation or publish a manuscript is final.
- Applicants will be notified of abstract acceptance by mail no later than 24 October 2005. Early notification of acceptance will be placed on the Web the week of 26 September 2005 at [www.electronicimaging.org](http://www.electronicimaging.org)
- Final placement in an oral or poster session is subject to the Chairs' discretion. Instructions for oral and poster presentations will be included in your author kit. All oral and poster presentations are included in the *Proceedings*, and require presentation at the meeting and submission of a manuscript.

### Proceedings

- These conferences will result in full-manuscript Chairs/Editor-reviewed volumes published in the *Proceedings*.
- Correctly formatted, ready-to-print manuscripts submitted in English are required for all accepted oral and poster presentations. Electronic submissions are recommended, and result in higher quality reproduction. Submission must be provided in PostScript created with a printer driver compatible with SPIE's online Electronic Manuscript Submission system. Instructions are included in the author kit and from the "Author Info" link at the conference website.
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- **Late manuscripts may not be published in the conference Proceedings**, whether the conference volume will be published before or after the meeting. The objective of this policy is to better serve the conference participants as well as the technical community at large, by enabling timely publication of the Proceedings.
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*IS&T/SPIE 18th Annual Symposium*

# Electronic Imaging

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