

SPECIAL ISSUE

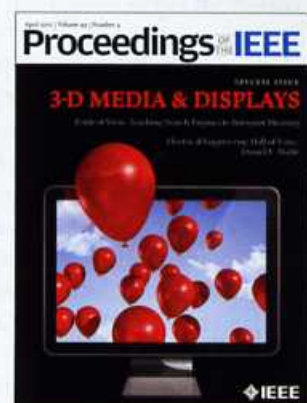
3-D MEDIA AND DISPLAYS

Edited by A. M. Tekalp, A. Smolic, A. Vetro, and L. Onural

- 540 State of the Art in Stereoscopic and Autostereoscopic Displays**
By H. Urey, K. V. Chellappan, E. Erden, and P. Surman
| INVITED PAPER | This overview covers most of the 3-D displays that are in use today and presents recent developments and advances in this field.
- 556 Three-Dimensional Optical Sensing and Visualization Using Integral Imaging**
By M. Cho, M. Daneshpanah, I. Moon, and B. Javidi
| INVITED PAPER | The current state-of-the art, potential applications of integral imaging, recent research results, and potential applications are discussed.
- 576 Digital Holographic Three-Dimensional Video Displays**
By L. Onural, F. Yaraş, and H. Kang
| INVITED PAPER | Included in this paper are a signal-processing-based analysis of light diffraction by spatial modulators, pickup schemes for these displays, and specifications for a satisfactory quality display.
- 590 Production Rules for Stereo Acquisition**
By F. Zilly, J. Kluger, and P. Kauff
| INVITED PAPER | This paper discusses stereoscopic 3-D camera systems, related production technology and stereography, focusing on the actual capturing process, and related technology.
- 607 Three-Dimensional Video Postproduction and Processing**
By A. Smolic, P. Kauff, S. Knorr, A. Hornung, M. Kunter, M. Müller, and M. Lang
| INVITED PAPER | Components and processes in the 3-D content creation workflow and advanced algorithms applied to captured signals to create high-quality content are elaborated on in this paper.
- 626 Overview of the Stereo and Multiview Video Coding Extensions of the H.264/MPEG-4 AVC Standard**
By A. Vetro, T. Wiegand, and G. J. Sullivan
| INVITED PAPER | In this paper, techniques to represent multiple views of a video scene are described, and compression methods for making use of correlations between different views of a scene are reviewed.
- 643 3-D Video Representation Using Depth Maps**
By K. Müller, P. Merkle, and T. Wiegand
| INVITED PAPER | These representations are able to generate many views at the receiver and allow the acquisition format and transmission constraints to be decoupled from display requirements.
- 657 Multichannel Audio Coding Based on Analysis by Synthesis**
By I. Elfitri, B. Günel, and A. M. Kondoz
| INVITED PAPER | An overview of familiar multichannel coding techniques and a new coding framework for improving the objective fidelity of decoded signals are presented in this paper.

DEPARTMENTS

- 531 POINT OF VIEW**
In-Depth Understanding: Teaching Search Engines to Interpret Meaning
By C. D. Seuss
- 536 SCANNING THE ISSUE**
Special Issue on 3-D Media and Displays
By A. M. Tekalp, A. Smolic, A. Vetro, and L. Onural
- 742 SCANNING OUR PAST**
Electrical Engineering Hall of Fame:
Daniel E. Noble
By J. E. Brittain
- 745 FUTURE SPECIAL ISSUES/SPECIAL SECTIONS**



On the Cover: This month's cover is an artist's attempt to illustrate the concept of this Special issue on 3-D Media and Displays with an image of a balloon that seems to apparently float off the page.

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SPECIAL ISSUE: 3-D Media and Displays

- 671 Transport and Storage Systems for 3-D Video Using MPEG-2 Systems, RTP, and ISO File Format**
By *T. Schierl and S. Narasimhan*
| INVITED PAPER | This paper discusses standards for systems-level support to transport and storage of 3-D video, and describes extensions to MPEG-2 systems for real-time transport on—and progressive downloading from—the Internet.
- 684 Infrastructures for Home Delivery, Interfacing, Captioning, and Viewing of 3-D Content**
By *D. K. Broberg*
| INVITED PAPER | Practical concerns about 3-D media at home, such as signal interfaces between consumer products and captions that do not require use of special eyeglasses, are discussed in this paper.
- 694 Flexible Transport of 3-D Video Over Networks**
By *C. G. Gürler, B. Görkemli, G. Saygılı, and A. M. Tekalp*
| INVITED PAPER | The authors of this paper look at the future of video transport and see developments such as stereoscopic video, streaming of multiview video, and view-selective streaming.
- 708 Three-Dimensional Media for Mobile Devices**
By *A. Gotchev, G. B. Akar, T. Capin, D. Strohmeier, and A. Boev*
| INVITED PAPER | This paper provides an overview of technologies to deliver 3-D media to next-generation mobile devices; the importance of efficient and robust transmission over error-prone channels is stressed.

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