



Applications of Digital Image Processing XLVII (OP332)

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SUBMISSIONS TO THE CONFERENCE SHOULD HAVE ABSTRACT TEXT LENGTHS OF 1,000 WORDS OR LESS.

The field of digital image processing has experienced continuous and significant expansion in recent years. The usefulness of this technology is apparent in many different disciplines covering entertainment through remote sensing. The advances and wide availability of image processing hardware along with advanced algorithms have further enhanced the usefulness of image processing. The Application of Digital Image Processing conference welcomes contributions of new results and novel techniques from this important technology.

Papers are solicited in the broad areas of digital image processing applications, including:

APPLICATION AREAS

- image processing in sustainability applications
- image processing in medical applications
- image processing in remote sensing
- image processing in space
- image processing in automotive applications
- image processing in entertainment
- image processing in digital cinema
- image processing in gaming
- image processing in video surveillance
- image processing in drones
- image processing in multimedia applications
- image processing in telepresence
- image processing in visual search
- image processing in real time applications
- blockchain and distributed ledger technologies in imaging.

NEW IMAGING MODALITIES AND THEIR PROCESSING

- high dynamic range
- wide color gamut
- high frame rate
- ultra-high definition (4K, 8K, and beyond)
- holographic content
- light field content
- point cloud content
- plenoptic content

- multidimensional content
- multimodal content.

IMMERSIVE IMAGING

- imaging in virtual reality
- imaging in augmented reality
- imaging in mixed reality
- omnidirectional imaging
- 360-degree imaging.

IMAGE AND VIDEO PROCESSING AND ANALYSIS

- image and video enhancement
- image and video restoration
- image registration techniques
- robot and machine vision
- pattern recognition
- feature extraction and tracking
- computational imaging
- image and video annotation
- image and video indexing
- image and video management
- search and retrieval.

NEW STANDARDS IN IMAGE AND VIDEO APPLICATIONS

- JPEG
- MPEG
- VCEG
- SMPTE
- AOM
- other standards.

SECURITY IN IMAGING

- ownership protection
- integrity verification
- conditional access
- privacy protection
- biometrics
- forensics
- deepfakes
- disinformation, misinformation, malinformation.

IMAGING REQUIREMENTS AND FEATURES

- low latency
- low power
- low complexity
- real-time
- scalability
- error resiliency
- random access
- new requirements and features.

IMAGING SYSTEMS

- new image processing architectures
- implementation considerations
- complexity considerations
- power consumption considerations
- optimization considerations
- performance metrics.

COMPRESSION

- image compression
- video compression
- perceptual compression
- lossless compression
- transcoding
- new methods for image compression
- new methods for video compression.

HUMAN VISUAL SYSTEM AND PERCEPTUAL IMAGING

- image quality assessment and metrics
- video quality assessment and metrics
- perceptually motivated image processing
- Quality of Service (QoS) issues in imaging
- Quality of Experience (QoE) issues in imaging.

ARTIFICIAL INTELLIGENCE IN IMAGING

- machine learning applied to imaging
- deep learning applied to imaging
- assessment of Data Quality (DQ) in imaging
- imaging using Generative Adversarial Network (GAN)
- generative AI in imaging
- reinforcement learning applied to imaging
- image compression based on artificial intelligence
- video compression based on artificial intelligence
- new machine learning approaches in imaging.

NOVEL AND EMERGING METHODS IN IMAGING

- new and emerging applications in imaging
- new and emerging approaches in imaging.

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Below are abstract submission instructions, the accompanying submission agreement, conference presentation guidelines, and guidelines for publishing in the Proceedings of SPIE on the SPIE Digital Library. Submissions subject to chair approval.

Important dates

Abstracts due	7 February 2024
Registration opens	April 2024
Authors notified and program posts online	29 April 2024
Submission system opens for manuscripts and poster PDFs*	17 June 2024
Poster PDFs due for spie.org preview and publication	24 July 2024
Manuscripts due	31 July 2024
Advance upload deadline for oral presentation slides**	16 August 2024

*Contact author or speaker must register prior to uploading

**After this date slides must be uploaded onsite at Speaker Check-In

What you will need to submit

- Title
- Author(s) information
- Speaker biography (1000-character max including spaces)
- Abstract for technical review (200-300 words; text only)
- Summary of abstract for display in the program (50-150 words; text only)
- Keywords used in search for your paper (optional)
- Check the individual conference call for papers for additional requirements (i.e. extended abstract PDF upload for review or instructions for award competitions)

Note: Only original material should be submitted. Commercial papers, papers with no new research/development content, and papers with proprietary restrictions will not be accepted for presentation.

How to submit your abstract

- Visit the conference page: www.spie.org/op332call
- You may submit more than one abstract but submit each abstract only once
- Click the "Submit An Abstract" button on the conference page
- Sign in to your SPIE account or create an account if you do not already have one
- Follow the steps in the submission wizard until the submission process is completed

Submission agreement

All presenting authors, including keynote, invited, oral, and poster presenters, agree to the following conditions by submitting an abstract:

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- Email messaging for the conference series
- Submit a manuscript by the advertised due date for publication in the Proceedings of SPIE in the SPIE Digital Library
- Obtain funding for registration fees, travel, and accommodations
- Attend the meeting
- Present at the scheduled time

Review and program placement

- To ensure a high-quality conference, all submissions will be assessed by the conference chair/editor for technical merit and suitability of content
- Conference chairs/editors reserve the right to reject for presentation any paper that does not meet content or presentation expectations
- Final placement in an oral or poster session is subject to chair discretion

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