



Journal of Real-Time Image Processing: second issue of volume 16

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As noted in a previous editorial, starting this year in 2019 with volume 16, *Journal of Real-Time Image Processing* is going to publish 6 issues per year with each issue having a page budget of 250 pages. The purpose of increasing the frequency of issues and the number of pages is to diminish and ultimately eliminate the backlog of accepted papers that are published online waiting to appear in a print issue. Furthermore, this increase in the number of pages will address the increase in the number of manuscript submissions in 2018 by more than 10%. Due to the increase in the number of pages, a total of 19 papers are included in this issue. These papers are listed in the table provided in the editorial together with the keywords that define the scope or theme of these papers. The keywords listed in the table can be used to quickly locate papers that are of particular interest to readers.

Lately, we have been receiving many requests from researchers to offer special issues. Although special issues are encouraged and welcomed as they provide a comprehensive look at a particular real-time image processing topic, here we wish to re-state the following three major items regarding special issues. First, proposers or guest editors of special issues should note that the thrust of *Journal of Real-Time Image Processing* is on the real-time aspects of image and video processing; examples of these aspects include, but not limited to, computational complexity analysis and reduction compared to existing solutions, real-time hardware implementation, and steps taken to achieve real-time throughput. It is worth noting here that although the generic interpretation of the term real-time is to perform processing at the rate of about 30 frames per second, it involves different

rates depending on the application of interest. For example, in high speed camera applications, the real-time rate is much higher and in robot vision or automatic visual inspection applications, real-time operations can be achieved at lower rates. It is essential for any special issue topic to fall into the real-time theme of the journal. Second, in order to receive adequate number of manuscripts for an issue to appear as a special issue, it is important for guest editors to first contact and identify the area experts who would be willing to submit manuscripts to their special issues. It has been observed that relying solely on the Call for Papers (CFP) for a special issue would not generate adequate number of manuscript submissions to fill a special issue after accepting the high quality ones. Third, if a special issue is to be offered as a selection of manuscripts addressing real-time aspects of image or video processing that have been presented at a conference, the contents of the manuscripts to be submitted to the special issue must contain at least 50% new unpublished contributions beyond the conference papers due to the copyright and self-plagiarism issues that are involved. We are unable to consider special issues that consists of a selection of manuscripts whose contributions are more or less the same as those presented at conferences, workshops, symposia, etc. For additional information on special issues, proposers or guest editors are asked to strictly follow the “Guidelines for Offering and Managing Special Issues as Guest Editors of JRTIP” provided at https://static.springer.com/sgw/documents/1488308/application/pdf/SpecialIssueGuidelines_final.pdf when putting together their CFP proposals.

Considering the critical role that reviewers play in evaluating submitted manuscripts, we wish to remind reviewers that Springer has a Reviewer Reward Program. Those reviewers who complete 5+ high quality reviews can request a certificate in recognition of their review efforts as professional activity. In addition, these reviewers are offered a complimentary Springer book to thank them for their reviews. Furthermore, those reviewers who complete 10+ high quality reviews can request to join the Editorial Board of JRTIP by expressing their interest to the Editors-in-Chief.

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We would like to state here that as done in previous years, an editorial board meeting will be held during the SPIE Conference on Real-Time Image Processing and Deep Learning (whose program appears in the backmatter of this issue) in April of this year in Baltimore as part of the SPIE Symposium on Defense and Commercial Sensing. The outcome of this meeting will be reported in the next regular issue editorial.

As a final note in this editorial, we wish to thank the Associate Editors (AEs) Athanassios Skodras and André Stork, who are stepping down from their AE role, for their great service to the journal. Also, we would like to welcome the following five new AEs to the editorial board with expertise that are complementary to the existing expertise of the board: Gian Domenico Licciardo (Italy), Chen Chen (USA), Víctor Manuel Brea Sánchez (Spain), Frank Han-nig (Germany), Khaled Ben Khalifa (Tunisia) and Gwanggil Jeon (South Korea).

| Keywords | Paper title |
|---|---|
| Real-time template matching, object detection, two-dimensional index table | Real-time multi-class object detection using two-dimensional index—Dou, et al. |
| Frequency domain motion estimation, video coding, real-time DCT | High speed on-chip multiple cosine transform generator—Ismael, et al. |
| FPGA implementation of stereo matching, real-time disparity map, adaptive window in stereo matching | FPGA implementation of an efficient similarity-based adaptive window algorithm for real-time stereo matching—Pérez-Patricio, et al. |
| Vehicle self-localization, real-time park markings, fisheye camera | Park marking-based vehicle self-localization with a fisheye top view system—Houben, et al. |
| FPGA implementation of 2D convolution, real-time 2D convolution, CAPH language | An FPGA 2D-convolution unit based on the CAPH language—Aguilar-González, et al. |
| Real-time contrast enhancement, dynamic range compression, color processing on GPU | Real-time implementation of an adaptive simultaneous dynamic range compression and local contrast enhancement algorithm on a GPU—Tsai, et al. |
| Heterogeneous CPU–GPU implementation, real-time object tracking, tracking-learning-detection | Heterogeneous CPU–GPU tracking–learning–detection (H-TLD) for real-time object tracking—Gurcan, et al. |
| Survey of depth enhancement methods, real-time depth enhancement, high-quality depth maps | Overview of efficient high-quality state-of-the-art depth enhancement methods by thorough design space exploration—Vosters, et al. |

| Keywords | Paper title |
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| HEVC video coding, fast mode decision, HM14 reference software | Enhanced inter-mode decision algorithm for HEVC/H.265 video coding—Jaja, et al. |
| Video coding, fast lossless reference frame compression, fast double differential reference frame compressor | Efficient reference frame compression scheme for video coding systems: algorithm and VLSI design—Silveira, et al. |
| JPEG XT compression, HDR image encoding, coding efficiency of JPEG XT | Overview and evaluation of the JPEG XT HDR image compression standard—Ten, et al. |
| Fast implementation of 2D filters, power-of-two computation, efficient contrast enhancement | On the design of optimal 2D filters for efficient hardware implementations of image processing algorithms by using power-of-two terms—Horé, et al. |
| Fast vectorization, least squares vectorization, efficient point cloud computation | Fast total least squares vectorization—Jelinek, et al. |
| Color video enhancement, impulsive noise filtering, real-time video enhancement | Fast spatio-temporal digital paths video filter—Szczeplanski |
| Window memoization, inter-pixel redundancy for window memoization, fast inverse difference moment | Exact window memoization: an optimization method for high-performance image processing—Farzmaadi, et al. |
| Fast focusing for ultrasound imaging, FPGA implementation of total focusing method, interconnected FPGAs | A multi-FPGA architecture-based real-time TFM ultrasound imaging—Njiki, et al. |
| Nonlocal means computation, denoising in MR imaging, GPU image denoising | MRI denoising by nonlocal means on multi-GPU—Granata, et al. |
| Automated teller machine (ATM) activity identification, real-time detection at ATMs, image processing for ATM security | Real time security framework for detecting abnormal events at ATM installations—Tripathi, et al. |
| HEVC coding, fast motion estimation, FPGA implementation of motion estimation | Design and implementation of an efficient hardware integer motion estimator for an HEVC video encoder—Alcocer, et al. |

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