

Proposal for an IJCV

Special Issue on Deep Learning for Video Analysis and Compression

Aim and Scope

Due to the rapid popularization of digital cameras and mobile phone cameras, there is an increasing research interest in developing next-generation technologies for storing, transmitting, indexing and understanding various types of videos including movies, surveillance videos, web videos and personal videos. Deep learning technologies have demonstrated excellent performance in a broad range of video content analysis tasks such as activity recognition and video event recognition, video-based biometrics, video captioning and video question and answering, and video super-resolution. Meanwhile, deep video compression has become a new research direction in visual data compression, and the recent deep video compression technologies have achieved promising results on the benchmark datasets. In some real-world applications, the two tasks (i.e., video compression and video analysis) are tightly coupled with each other. For example, in the intelligent video surveillance systems, the videos are often compressed and transmitted back to the servers before performing video content analysis in the server side, and the quality of reconstructed videos will significantly affect the performance of the subsequent video analysis algorithms. To this end, it is therefore beneficial to develop advanced deep learning approaches for the new task of joint video content analysis and compression.

This special issue seeks high quality and original works on deep learning for the video analysis/compression applications. The goals of this special issue are three-fold: (1) investing fundamental theories and advanced frameworks for deep video analysis/compression; (2) presenting novel deep learning techniques applicable to at least one existing video analysis/compression application; (3) exploring new research directions (e.g., video compression for machines) for joint video content analysis and compression.

Topics of Interest

Manuscripts are solicited to address a wide range of topics on deep video analysis and compression, including but not limited to the following:

1. Fundamental theories and frameworks for deep video analysis/compression
2. Deep learning for activity recognition and video event recognition
3. Deep learning for object localization and segmentation in videos
4. Deep learning for video tracking
5. Deep learning for video based biometrics
6. Deep learning for video forensics
7. Deep learning for video and language
8. Deep learning for video super-resolution/denoising/deblurring
9. Deep learning for video compression and restoration
10. Deep learning for joint video content analysis and compression

Submitted papers should present original, unpublished work, relevant to one of the topics of the Special Issue. All submitted papers will be evaluated on the basis of relevance, significance of contribution, technical quality, scholarship, and quality of presentation, by at least three independent reviewers. It is the policy of the journal that no submission, or

substantially overlapping submission, be published or be under review at another journal or conference at any time during the review process.

Guidelines for authors can be found at <http://www.editorialmanager.com/visi/>. Papers submitted to this special issue should have a distinctive title using the format: **SI-DLVAC** <title>. All papers including invited papers will be peer reviewed by experts in the field.

*** Important Dates ***

Manuscript submission:	15 th December	2020
Preliminary results:	15 th March	2021
Revisions due:	15 th June	2021
Notification:	15 th August	2021
Final manuscripts due:	15 th September	2021
Anticipated publication:	4 th quarter	2021

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