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IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing
Special Issue on
“AI Technology, Methods, and Applications for Earth Observation Satellite Video”

With the rapid development of space remote sensing technology, video satellites have gradually become an important means of Earth observation. Satellite video imaging can achieve a large range of observation coverage, and more importantly, it can perform regional staring imaging in continuous time and obtain the dynamic information within the observation region. Meanwhile, satellite video imaging provides important data and technical support for the expanded application of Earth observation. In recent years, the application of intelligent vision algorithms in satellite video, represented by deep learning, has attracted widespread attention from academia and industry. However, there are still some issues to be solved in the field of Earth observation satellite video. On the one hand, how to fully combine with video satellite imaging mechanism and design specific algorithms to solve the problems of low accuracy and weak robustness in object detection, tracking, segmentation, and super-resolution is still a challenge. On the other hand, satellite video has temporal information that is not available in static image data, how to make full use of the temporal dynamic information and background invariance information in satellite video to optimize the model performance and volume is also a difficulty to be broken. In addition, satellite video has a wide range of applications, and its processing results can be applied to ground and marine transportation management, marine dynamic target monitoring, smart cities, and many other fields. The special issue aims to address the difficulties and challenges faced by satellite video intelligent vision tasks, to stimulate researchers to explore the challenges in satellite video data processing and analysis tasks, and to strongly promote the technological advancement of satellite video in multiple applications.

The broad topics include (but are not limited to):

- Benchmark datasets for deep learning-based satellite video processing and analysis
- Deep learning and utilization of satellite video (semi-supervised learning, weakly supervised learning, unsupervised learning, self-supervised learning, temporal information fusion, fine-grained feature representation and learning)
- Deep learning-based satellite video processing (object detection and recognition, single/multi object tracking, object segmentation, scene classification, super-resolution, change detection, etc.)
- Satellite video processing techniques for few or missing labeled samples (few-shot, zero-shot)
- Representation and utilization of satellite video background information (background modeling, satellite video intrinsic decomposition)
- Application of artificial intelligence in satellite video
- Research on satellite video application (traffic management, marine scene monitoring, disaster monitoring, etc.)

Schedule

Feb 1st, 2023: Submission system opening

Aug 31st, 2023: Submission system closing

Format

All submissions will be peer reviewed according to the IEEE Geoscience and Remote Sensing Society guidelines. Submitted articles should not have been published or be under review elsewhere. Submit your manuscript on <http://mc.manuscriptcentral.com/jstars>, using the Manuscript Central interface and select the “**AI Technology, Methods, and Applications for Earth Observation Satellite Video**” special issue manuscript type. Prospective authors should consult the site <https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=9082768> for guidelines and information on paper submission.

All submissions must be formatted using the IEEE standard format (double column, single spaced). Please visit http://www.ieee.org/publications_standards/publications/authors/author_templates.html to download a template for transactions. Please note that as of Jan. 1, 2020, IEEE J-STARS has become a fully open-access journal charging a flat publication fee \$1,250 per paper.

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