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IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing

Special Issue on
“Semantic Extraction and Fusion of Multimodal Remote Sensing Data: Algorithms and Applications”

Recently, the advanced sensor devices have boosted spaceborne and airborne imaging techniques towards diversified development mode, enabling us to acquire a large amount of multi-source, multi-sensor, and multi-modal data more easily. The diversity of data can enhance capabilities in a wide range of applications across the fields of remote sensing, computer vision, and land management. However, different modalities may lead to significant gaps in performance when methods and algorithms are designed and developed separately. Therefore, how to effectively extract semantic information from multimodal data and further fuse them is still a great challenging task due to the vulnerable semantic information between-in changeable scenes or extremely similar categories, complex noises from environmental conditions and instrumental sensors, physically and chemically atmospheric effects, and data degradation and distortion caused by illumination or topography changes. To this end, developing and designing new semantic extraction approaches and fusion strategies is an effective solution to enhance understanding and interpretation. Although some experimental work have exploited the synchronization of multimodal streams to investigate and model the scene semantics, yet the ability of effectively extracting and blending the semantic information across multi-modalities remains limited. This special issue aims at promoting recent advances in algorithms and applications that contribute to semantic extraction and fusion for multimodal remote sensing data, e.g., 2D gray images, 2D radar images (e.g., SAR), 3D grid optical images (e.g., RGB, multispectral, hyperspectral data), 3D unstructured point cloud data (e.g., LiDAR), and social media data.

The broad topics of this special issue include but are not limited to:

- New models and algorithms for multi-modal data processing and representation
- Multi-modal data fusion, analysis, and interpretation
- Effective feature extraction for multi-source or multi-temporal image matching and registration
- Multi-modal data reconstruction and restoration
- Hand-crafted or learning-based multi-modal feature representation and analysis
- Fusion of grid optical data and unstructured point cloud data
- Multi-modal feature fusion for anomaly, detection, object detection, and change detection
- Multi-modal or cross-modal feature learning and retrieval
- Novel benchmark multisource datasets
- Novel applicational case studies with multi-modal datasets

Schedule

January 1, 2021: Submission system opening

June 30, 2021: 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 “Semantic Extraction and Fusion of Multimodal Data” 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 since January 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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