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

Special Issue on
"Deep learning for Geospatial Object Detection in Complex Scenes: Dataset, Algorithms and Applications"

Geospatial object detection is one of the active research areas in the field of remote sensing. It plays a significant role in marine surveillance, identification of metropolitan areas, cargo transportation, and harbor administration. Geospatial object detection has been evolving towards diverse platforms (satellites, aircraft, UAVs, etc.) and diversified data (visible light, infrared, hyperspectral, multispectral) as remote sensing technology and equipment improve. This diverse data can improve the representation ability of geospatial objects. However, the object in the image varies from a few pixels to dozens of pixels due to the lengthy imaging distance, especially for the small object images, which often results in poor detection performance. Furthermore, the extracted object semantic information is fragile when the image contains complex and varying scenes or highly similar target categories or when the spatial data is degraded and distorted due to illumination or terrain changes. These restrictions severely hamper the performance of geospatial object detection systems. Therefore, object detection in the presence of complicated background, especially for small object detection, remains a challenging mission. Even deep learning methods with strong feature representation have limited performance and are still far from practical demands. As a result, this special issue aims at promoting recent advances in data, algorithms, and applications that contribute to geospatial object detection.

The broad topics include (but are not limited to):
- New models and algorithms for geospatial data processing and representation
- Effective feature extraction for geospatial image matching and registration
- Single-frame infrared small target (SIRST) detection
- Multi-frame infrared small target (MIRST) detection
- Multi-modal or multi-spectrum geospatial object detection
- Multi-modal or multi-spectrum feature fusion, reconstruction for object detection
- Novel benchmark geospatial datasets
- Novel applicational case studies with geospatial object detection datasets

Schedule
Jan 1, 2022   Submission system opening
Jun 30, 2022   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 "**Deep learning for Geospatial Object Detection in Complex Scenes: Dataset, Algorithms and Applications**" 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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