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

Special Issue on "Advancement in Object Detection of Multi-source Remote Sensing Data Driven by Deep Knowledge Learning"

Object detection in remote sensing images can be used to obtain timely and precise battlefield information, capture strategic objects, and provide precise qualitative and quantitative information in a high-tech confrontation. In the field of civilian use, object detection also plays a decisive role in resource detection, environmental monitoring, urban planning, and so on. Image object detection is to determine whether there are objects in the image, if there are, then give them a reasonable explanation, that is, judge what the object is and determine its position. The use of Visible (VIS) remote sensing imagery for object detection has achieved a certain degree of success, which uses electromagnetic wave imaging at a wavelength of 400–760 nm, visually reflecting the true color and texture of objects.

Many state-of-the-art object detection algorithms in remote sensing have been developed. However, the detection ability using only a single data source remains limited, due to the lack of feature diversity. As a result, the joint use of multi-source data, such as RGB, hyperspectral, multispectral, and synthetic aperture radar (SAR), might be a good solution. With the development of multi-source remote sensing, the quantity and quality of remote sensing images have been greatly improved, which can make up, to some extent, for the limited performance of using a single data source. Some researchers have developed work using multi-source data to achieve more accurate object detection. However there is still room for improvement. With the recent advancement of deep learning, deep learning methods have shown that neural network models and more specifically convolutional neural networks (CNNs) are tailored to image classification and detection.

This special issue is devoted to the publication of state-of-the-art research papers on object detection of multi-source remote sensing data driven by deep knowledge learning especially the work which addresses the challenges in the field.

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

- Deep learning-based models for object detection
- Deep learning-based multi-source remote sensing data fusion
- Object detection from multi-source remote sensing data
- Deep learning-based domain adaptation

Schedule

Nov 1, 2021	Submission system opening
April 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 **"Object Detection of Multi-source Remote Sensing 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 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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