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IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing
Special Issue on
“Contrastive Learning for Remote Sensing Image Processing & Application”

Deep learning (DL) methods have gradually become the mainstream solution for the most RS image processing and application tasks in the last decade. However, when considering the size and quality of the training data, neither of these methods can serve as the one solution for all. And annotating large-scale datasets is an extremely laborious, time-consuming and expensive procedure, which could strongly impede the applicability of DL in real-world scenarios. As time goes on, challenges from the growing gap between an increasing amount of RS data and annotated samples has also raised the attentions from active learning, semi-supervised learning, transfer learning, meta learning and few-shot learning. However, in recent years, growing interests have raised for self-supervised learning, particularly the contrastive branch, which capable of learning valuable information from unlabeled data that can be easily transferred to multiple applications. Considering the advanced properties and fast development of contrastive learning methods in machine learning and computer vision fields, we believe that contrive learning will attract more and more attentions from the RS image processing and application field in the future.

This special issue seeks review and novel studies on advanced contrastive learning for image processing and application tasks in remote sensing, focused on learning from limited labeled and/or unlabeled data.

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

- Contrastive learning for image classification and semantic segmentation
- Contrastive learning for change detection, unmixing and target detection
- Contrastive learning for image fusion
- Contrastive learning for few-shot image classification
- Contrastive learning for feature representation
- Contrastive transformers for image classification
- Cross-domain contrastive learning for image classification and semantic segmentation
- Novel contrastive learning methods (e.g., negative sampling, clustering, distillation and so on)

Schedule

01, Jan.2023 Submission system opening

31, Oct.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 “**Contrastive Learning for Remote Sensing Image Processing & Application**” 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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