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

Special Issue on
"Large-Scale Pretraining for Interpretation Promotion in Remote Sensing Domain"

Deep learning models are currently the cornerstone of artificial intelligence in remote sensing image interpretation. With the rapid development of various platforms (e.g., satellites, UAVs, airplanes) equipped with different types of sensors (e.g., multispectral, hyperspectral, synthetic aperture radar), there are massive remote sensing data, which can be accessed and collected for large-scale model pretraining. In recent years, there has been a surge of interest and rapid development of large-scale pretrained models. Various supervised and self-supervised pretraining strategies have emerged and can be used for setting up foundation models in remote sensing. Different from the traditional narrow AI systems that only focus on a specific dataset or task, large-scale pretrained models are capable of a wide range of general tasks after being trained on massive data. The technique of large-scale pretrained models has the potential to boost various remote sensing tasks (e.g., classification, detection, segmentation, image captioning, and so on), in different practical requirement scenarios (e.g., zero-shot, few-shot, cross-domain, real-time processing).

This special issue seeks novel developments on large-scale pretraining for building efficient remote sensing foundation models. In addition, it aims to explore novel paradigms or mechanisms for intelligent interpretation.

The broad topics include (but are not limited to):
- New architectures and theories for model pre-training;
- Setting up a foundation model in remote sensing domain;
- Model fine-tuning or adaptation for advancing remote sensing intelligent interpretation.
- Large-scale language model applied for remote sensing visual question answering;
- Zero-shot/few-shot learning for remote sensing imagery;
- Cross-domain learning for remote sensing imagery;
- Open vocabulary tasks for remote sensing;
- Knowledge distillation and model compression for pretrained model;
- Real-time and fault-tolerant for onboard processing;

Schedule
01 Feb 2024, submission system opening
31 Aug 2024, 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 "**Large-Scale Pretraining for Interpretation Promotion in Remote Sensing Domain**" 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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