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Artificial Intelligence and Earth Observation: On-Board Pre-processing, Data Compression and Image Selection

Guest Editors:

Dr. Pietro Guccione

Dr. Luisa Verdoliva

Dr. Michele Martone

Prof. Dr. Xiaoxiang Zhu

Deadline for manuscript submissions:
closed (30 September 2024)

Message from the Guest Editors

Potential topics are welcomed, but are not limited to:

- Image selection for ad hoc data compression. The selection of specific images for onboard data compression. Based on the target (in SAR by reflectivity, polarization, incidence angle; in optical/NIR by geographical area, presence of clouds, etc.), a more efficient data representation can be obtained by searching for the most performance quantizer and the ad hoc tuning of inner quantization parameters. This may be relevant, as an example, for future SAR missions with digital multichannel antenna.
- Onboard preprocessing. Smart data preprocessing for efficient onboard data compression. The transformation of data to provide a correlation, for example, range compression for SAR data, or towards another sparse domain, could help AI to find optimal space tessellation and compact data representation.
- Onboard data compression for specific targets. AI algorithms and onboard processing could be exploited for the finding of novel and more compact data representations, especially for specific targets such as ship recognition in maritime environments in SAR image acquisition, which is also an interesting example of sparse signals.

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Editor-in-Chief

Dr. Prasad S. Thenkabail
Senior Scientist (ST), U. S. Geological Survey (USGS), USGS Western Geographic Science Center (WGSC), 2255, N. Gemini Dr., Flagstaff, AZ 86001, USA

Message from the Editor-in-Chief

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Contact Us

Remote Sensing Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland

Tel: +41 61 683 77 34
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remotesensing@mdpi.com
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