Special Issue

Advancing Earth Observation Through Artificial Intelligence: From Foundation Models to Intelligent Retrieval Systems

Message from the Guest Editors

Artificial Intelligence (AI) and Machine Learning (ML) are rapidly transforming the landscape of Earth Observation (EO), offering unprecedented capabilities to process, interpret, and exploit satellite data. This Special Issue aims to showcase top-notch research that leverages AI/ML to enhance the utility, precision, and accessibility of remote sensing data across atmospheric, oceanic, and land domains. We invite contributions that address core challenges and opportunities at the intersection of AI and EO, including the development of foundation models, the emulation of complex physical processes, and the creation of AI-native retrieval and detection algorithms. Key topics include, but are not limited to, the following: Foundation Models for Earth Observation; AI for data fusion and data assimilation; Satellite Retrieval Algorithms; Radiative Transfer Emulators; Data Curation for AI; Super-Resolution in Remote Sensing; Radar Proxy Learning; Cloud Detection and Scene Classification.

Guest Editors

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Dr. Claudia Acquistapace

Prof. Dr. Andrew Parnell

Deadline for manuscript submissions

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Message from the Editor-in-Chief

Remote Sensing is now a prominent international journal of repute in the world of remote sensing and spatial sciences, as a pioneer and pathfinder in open access format. It has highly accomplished global remote sensing scientists on the editorial board and a dedicated team of associate editors. The journal emphasizes quality and novelty and has a rigorous peer-review process. It is now one of the top remote sensing journals with a significant Impact Factor, and a goal to become the best journal in remote sensing in the coming years. I strongly recommend *Remote Sensing* for your best research publications for a fast dissemination of your research.

Editor-in-Chief

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