Special Issue

Multispectral and Hyperspectral Imaging for Next-Generation Sensing Applications

Message from the Guest Editors

Hyperspectral imaging has emerged as a crucial tool in remote sensing geology, providing essential support for many applications. Despite its promise, achieving high spatial, temporal, and spectral resolution simultaneously—termed the "three high resolutions"—remains a significant bottleneck in applications due to inherent trade-offs among these dimensions. This Special Issue focuses on the use of innovative systems for high-resolution hyperspectral imaging, advanced methodologies such as super-resolution techniques, spectral unmixing, anomaly detection, and refined classification processes. Given the widespread use of deep learning and the scarcity of training data in remote sensing, this Special Issue will explore advancements in hyperspectral data generation. This research seeks to mitigate the challenge of "data scarcity," facilitating a shift from basic classification to more sophisticated identification of hyperspectral targets. By supporting models with increased parameter scale and complexity, we will provide the theoretical and methodological foundations necessary to advance applications into the era of large-scale remote sensing models.

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Message from the Editor-in-Chief

Sensors is a leading journal devoted to fast publication of the latest achievements of technological developments and scientific research in the huge area of physical, chemical and biochemical sensors, including remote sensing and sensor networks. Both experimental and theoretical papers are published, including all aspects of sensor design, technology, proof of concept and application. Sensors organizes Special Issues devoted to specific sensing areas and applications each year.

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