Special Issue

Next-Generation Crop Management: Bridging AI Vision and Sensor Fusion for Smarter Agronomy

Message from the Guest Editors

As agriculture enters a new era of data-driven decision-making, the integration of artificial intelligence (AI)-powered vision systems and advanced sensor fusion is poised to transform crop management. With heightened challenges related to climate variability, resource limitations, and global food security, there is an urgent need to develop smarter, more adaptive solutions for sustainable agronomy.This Special Issue focuses on innovative approaches that harness the synergy between AI-based computer vision and multisensor data fusion—including thermal, hyperspectral, LiDAR, and IoT-based environmental sensing—to enable precise, efficient, and intelligent crop monitoring and management. We welcome research that leverages these technologies to enhance phenotyping, stress detection, irrigation control, nutrient management, yield prediction, and post-harvest processing.We encourage the submission of original research articles, comprehensive reviews, and technical communications that present novel methodologies, field validations, or integrated platforms combining AI and sensor technologies for next-generation precision agriculture.

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