Special Issue

Agricultural Imagery and Machine Vision

Message from the Guest Editors

Global agriculture is undergoing a pivotal shift from traditional practices to intelligent, precision-driven systems. Agricultural imagery and machine vision technologies are now key drivers of smart agriculture, enabling real-time crop monitoring, early pest and disease warnings, autonomous robotics, and intelligent resource management. These technologies are transforming traditional production models and decision-making. However, challenges remain, including fragmented research, limited interdisciplinary collaboration, and the need for breakthroughs in core technologies. In practice, low image recognition accuracy in complex environments, limited multi-source data fusion, and high implementation costs restrict large-scale adoption. This Special Issue welcomes research on crop phenotyping via imagery and machine vision; pest, disease, and weed identification using image recognition and machine learning; yield prediction with AI models; agricultural robotics and automation; data fusion for decision-making; and novel imaging technologies and sensors such as drones, remote sensing, and LiDAR.

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