Special Issue

Automation and Digitalization in Orchard Machinery

Message from the Guest Editors

With the rapid growth of industrial manufacturing, smart sensors, computing power, and Artificial Intelligence (AI)-enabled algorithms exploring automated and digitalized orchard machinery seems to be an alternative and promising solution. To address the emerging issues during the orchard production pipeline (planting, training, thinning, pollinating, spraying, irrigating, disease monitoring, pest control, harvesting, post-harvesting), this Special Issue aims to bring a collection of outstanding articles with the main focus on (but not limited to) the following research areas: field robotics for tree fruit crops (e.g., path planning and obstacle avoidance systems), automated machine prototypes for orchard productions, advanced in-field sensing technologies, deep learning-enabled machine vision (e.g., 3D canopy reconstruction, object detection, and semantic/instance segmentation), precision canopy management, precision crop load management; mechatronics in unmanned ground/aerial vehicles (UGVs/UAVs), self-guided platforms, automated orchard mapping systems, advanced control systems, innovations in end-effector/actuation design, and canopy–machinery interactions.

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Editor-in-Chief

Dr. Mathew G. Pelletier
Retired Scientist from Agricultural Research Service, United States Department of Agriculture, Lubbock, TX, USA

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manuscripts are peer-reviewed and a first decision is provided to authors approximately 20.6 days after submission; acceptance to publication is undertaken in 5.4 days (median values for papers published in this journal in the first half of 2025).