

Special Issue

AI-Driven and Embodied Agricultural Robotics: From Intelligent Perception to Autonomous Field Operations

Message from the Guest Editors

Artificial intelligence is reshaping agricultural robotics from automated machines into intelligent and embodied systems capable of perceiving, reasoning, planning, and acting in complex agricultural environments. Topics of interest for this Special Issue include, but are not limited to: Foundation models, multimodal AI, vision-language models, and embodied AI for agricultural robotics; Robot learning, autonomous decision-making, and intelligent task planning; Robot perception integrated with navigation, manipulation, harvesting, weeding, spraying, pruning, and crop management; Localization, mapping, SLAM, navigation, motion planning, and autonomous control; Agricultural manipulators, end-effectors, soft robotics, and robot mechanism design; Multi-robot systems, aerial-ground collaboration, cloud robotics, and digital twins; Integrated autonomous agricultural robotic systems and long-term field deployment; Benchmarking, evaluation, and real-world validation of agricultural robotic systems, including operational efficiency, reliability, robustness, and autonomy.

Guest Editors

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Deadline for manuscript submissions

25 February 2027



Agriculture

an Open Access Journal
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Impact Factor 4.5
CiteScore 7.8



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Message from the Editor-in-Chief

Agriculture (ISSN 2077-0472) is an international, scholarly and scientific open access journal publishing peer-reviewed research papers, review articles, communications and short notes that reflect the breadth and interdisciplinarity of agriculture.

Editor-in-Chief

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