Special Issue

Application of Robotics and Artificial Intelligence (AI) in Permanent Crops

Message from the Guest Editors

Modern agriculture faces numerous challenges, including labor shortages, diminishing arable land, climate change, soil degradation, water scarcity, and complex pest and disease management. These challenges call for innovative solutions that go beyond traditional farming practices. Recent advancements in robotics and artificial intelligence (AI) present transformative opportunities to address these issues. From improving productivity and sustainability to reducing environmental impact, robotics and AI have the potential to revolutionize agriculture. The growing importance of these technologies is underscored by the global agricultural robotics market, projected to reach USD 8.82 billion by 2025. This Special Issue will explore the diverse applications of robotics and AI in agriculture, addressing topics such as data-driven decision-making, precision farming, autonomous systems, and advanced monitoring and sensing technologies. Contributions will highlight innovations in crop monitoring, pest detection, yield prediction, and weeding and treatment systems, as well as tools supporting real-time and predictive decision-making.

Guest Editors

Dr. Jurij Rakun

Chair of Biosystems Engineering, Faculty of Agriculture and Life Sciences, University of Maribor, 2000 Maribor, Slovenia

Dr. Péter Bodor-Pesti

Institute for Viticulture and Oenology, Hungarian University of Agriculture and Life Sciences, Budapest, Hungary

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Agriculture
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
agriculture@mdpi.com

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Prof. Dr. Les Copeland

Sydney Institute of Agriculture, School of Life and Environmental Sciences, The University of Sydney, Sydney, NSW 2006, Australia

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