Special Issue

AI-Powered Phenotyping of Horticultural Plants

Message from the Guest Editors

This Special Issue focuses on the applications of AI-assisted phenotyping in horticulture, aiming to showcase cutting-edge research and developments that push the boundaries of traditional horticultural practices.

- **AI-Driven Image Analysis and Pattern Recognition**: Using machine learning and computer vision to analyze plant traits, detect diseases, and monitor growth patterns with high accuracy.
- **Precision Agriculture**: Implementing AI for site-specific management, optimizing resource use, and minimizing environmental impacts through precision phenotyping.
- **Genomic Selection and Breeding**: Integrating AI with genomic data to predict desirable traits and accelerate the development of superior horticultural varieties.
- **Stress Tolerance and Adaptation**: Using AI to understand and improve plant responses to biotic and abiotic stresses, enhancing crop resilience.
- **Robotics and Automation in Phenotyping**: Exploring autonomous systems and robots for high-throughput phenotyping, reducing labor costs, and increasing data collection efficiency.
- **Data Integration and Management**: Developing AI-driven platforms to manage and analyze diverse phenotypic and environmental data sets.

Guest Editors

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About the Journal

Message from the Editor-in-Chief

Horticultural plants and their products provide sustenance, health, and beauty. A confluence of factors is putting increasing pressure on horticultural production to evolve, and innovative research is addressing these challenges. *Horticulturae* provides a venue to communicate research results in a rapid manner with open access, allowing everyone the opportunity to stay abreast of leading research addressing horticulture. I invite you to consider publishing the results of your research in this high quality, peer-reviewed journal.

Editor-in-Chief

Prof. Dr. Luigi De Bellis
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