Special Issue

Machine Learning for Plant Phenotyping in Wheat

Message from the Guest Editors

This Special Issue aims to explore and showcase the latest research progress, methodologies, and applications of ML in wheat phenotyping studies, focusing on advancements that improving wheat genetic breeding and high-efficiency production management. Topics include, but are not limited to, the application of ML and DL techniques in the following:

- Micro-scale phenotypic trait analysis: e.g., morphology of stomata, starch granules, and other physiological micro-indicators.
- Organ-scale phenotypic trait analysis: e.g., seed, root, stem, leaf, and spike.
- Individual-scale phenotypic trait analysis: e.g., plant architecture and phenological stages.
- Population-scale phenotypic trait analysis: e.g., uniformity and yield.
- Applications in analyzing other critical 2D and 3D wheat phenotypic traits.
- Development of predictive/estimation models for key wheat phenotypic traits.
- Genotype–phenotype associations: Integration of ML with genomic data to predict phenotypic outcomes, thereby supporting marker-assisted breeding and genomic selection.

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Message from the Editor-in-Chief

Plants is an open access journal which provides an advanced forum for research findings in areas related to plant function, its physiology, biology, taxonomy, stresses, and its interactions with other organisms. It publishes original research articles, reviews, reports, conference proceedings (peer reviewed full articles) and communications. In original research papers, it is important that full experimental details are provided. We also encourage timely reviews and commentaries on topics of interest to the plant research community.

Editor-in-Chief

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