Special Issue

Innovations and Prospects for Future Agriculture: Applications of Machine Learning and AI in Crop Breeding

Message from the Guest Editors

The integration of machine learning (ML) and artificial intelligence (AI) into plant breeding represents a significant leap forward, driven by the historical imperative to enhance agricultural productivity and resilience. Faced with the challenges of feeding a global population amidst the growing pressures of climate change and dwindling natural resources, the application of computational intelligence offers opportunities. This Special Issue aims to explore the scope of how ML and AI can improve plant breeding practices. We seek to showcase cutting-edge research that demonstrates novel algorithms, methodologies, and applications of AI and ML in areas such as precision phenotyping, genomic selection, disease and pest resistance breeding, stress tolerance enhancement, and the optimization of breeding programs. We are soliciting original research articles, reviews, and perspectives that highlight innovative approaches, significant findings, and future directions in this rapidly evolving field.

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