Special Issue

Complex Interactions of Applied Artificial Intelligence, Machine Learning and Plant Science in Space Food Production

Message from the Guest Editors

Plant science can benefit from the application of AI to help create self-sustaining ecosystems by optimizing resource efficiency, lowering dependency on outside sources, recycling nutrients or materials within the system, and continuing to produce a consistent amount of fresh food for human consumption. The goal of AI in plant science for space food production is to develop long-term space missions or extraterrestrial colonization sustainable systems. This Special Issue in AgriEngineering explores the intersection of applied artificial intelligence (AAI), machine learning (ML), and plant science within space food production, aiming to achieve SDG 2 (Zero Hunger) and SDG 12 (Responsible Consumption and Production) by leveraging agricultural engineering principles and advanced intelligent technologies. By integrating AI-guided environmental controls and optimizing plant growth, this research seeks to establish self-sustaining ecosystems, aligning with SDG 9 (Industry, Innovation, and Infrastructure) for long-term space habitation, fostering sustainable food systems beyond Earth's confines.

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