ABSTRACT

This model presents an innovative approach for enhancing the accuracy and reliability of fruit disease recognition through an integrated framework of two-stream deep learning models. By leveraging both spatial and temporal information, the framework aims to optimize the fusion of diverse data sources for more effective disease detection. Spatial information, in the form of fruit images, is processed using convolutional neural networks (CNNs), while temporal information, such as disease progression data, is analyzed with recurrent neural networks (RNNs) or similar architectures. The integration of these streams occurs at various levels, enabling the model to exploit complementary features and make more accurate predictions. The proposed framework holds promise for advancing crop management practices and improving agricultural productivity by enabling early and precise identification of fruit diseases.