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(57) Abstract :
Disclosed herein is a leaf disease diagnosis system and method thereof (100) that comprises a data acquisition unit (102), configured to capture leaf image data and collect sensor readings from hyper spectral imaging and biochemical sources in agricultural environments, a processing unit (104), operatively connected to the data acquisition unit (102), the processing unit (104), comprising a pre-processing module (106), a deep learning-based feature extraction module (108), a spectral analysis module (110), a bio sensing module (112), an edge inference module (114), a communication network (116), operatively connected to the processing unit (104), and configured to relay diagnostic outputs and system feedback, a user device (118), operatively connected to the processing unit (104), via the communication network (116), a user interface (120), inside the user device (118), the user interface (120), configured to display diagnosis results, visualize data trends, provide treatment recommendations, and accept user-defined configurations and feedback inputs.

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