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Video object detection system for Paddy plant diseases identification

A dissertation by

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ABSTRACT

In this paper, we present a mobile application for the detection of diseases in paddy plants using videos. The system utilizes machine learning algorithms, including YOLOv7 and TFlite, for detecting and classifying different diseases in paddy plants. The user can upload videos or image using either a camera or a gallery, and the app includes a preprocessing stage to remove video defocus, motion blur, and part occlusion. The processed videos are then fed to the disease detection algorithm, which classifies the disease based on the features extracted from the video. The app provides an automated and efficient way of detecting and diagnosing diseases in paddy plants without the need for an external API. The system's performance is evaluated on a dataset of iamges, and the results demonstrate its effectiveness in detecting and classifying different diseases in paddy plants. a. The overall accuracy of the trained model was 86.3%. The app's implementation includes a technology stack that includes a React frontend, Python-based middle tier, and TensorFlow backend. The system provides a practical tool for farmers to manage crop diseases, ultimately leading to improved crop yield.

Key words: Rice diseases, Video processing, YOLO, TFLite Disease detection