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Advanced Prediction of Crop Diseases Using Cetalatran-Optimized Deep KNN in Multispectral Imaging

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Crop leaf diseases have a significant impact on a country's agricultural economy, as crop yield is essential for promoting economic growth.

Manual detection of these diseases is time-consuming and inefficient. Consequently, researchers have developed various techniques for the automated detection of plant diseases. In this study, we propose a novel approach to identify crop diseases using a deep k-Nearest Neighbors (KNN) classifier optimized via Cetalatran optimization. Cetalatran optimization rapidly identifies the most relevant features for disease prediction, allowing for early and efficient detection. The performance of the Cetalatran-optimized deep k-NN algorithm is evaluated using accuracy, sensitivity, and specificity metrics. The proposed method yields improved results, with accuracy, sensitivity, and specificity values of 91.879%, 92.736%, and 95.951%, respectively, demonstrating its superior efficiency compared to existing techniques.

Keywords:

crop leaf disease, cetalatran optimization, economy, deep KNN classifier, parameter metrics

1. Introduction**2. Motivation****3. Cetalatran Optimization Algorithm****4. Methodology****5. Results and Discussion****6. Conclusions****References**

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