Submission Summary

Conference Name
International Conference on Progressive Computational Intelligence, Information Technology, and Networking (Com-IT-Con 2024)

Track Name
Track 8: Artificial Intelligence & IOT

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492

Paper Title
CROP DISEASE DETECTION USING RMSPROP OPTIMIZER

Abstract
This project explores the use of CNNs in crop disease identification and classification, with reference to sustainable agriculture. We hope to improve disease detection by making it more accurate and efficient and using the advanced image processing techniques. So that that support rapid response and effective crop management. We employed a deep learning method where we built a TensorFlow and Keras based CNN model. We have used the RMSPROP (Root mean square propagation) optimizer to optimize. The data set used contained pictures of healthy crops as more as ones affected by various diseases, these were then grouped into training, validation and also test sets. To make our model more accurate and robust, data enhancement techniques like rotation, height shift, width shift, shear transformation, zooming and horizontal flipping were used. We scaled down the images for uniformity purposes while normalizing them to enhance their training effect. Convolutional layers in the CNN architecture had activation functions being ReLUs (Rectified Linear Units) so as to capture intricate patterns in the images; subsequently this was followed by max-pooling layers that eliminated unnecessary calculations and reduced dimensions. Dense layers made up of final layers led to multi-classification SoftMax output layer.

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Conflicts of Interest

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Submission Files

CROP_DISEASE_DETECTION USING _RMSPROP _OPTIMIZER_IEEE.pdf (509.5 Kb, 10/12/2024, 11:55:39 AM)
CROP_DISEASE_DETECTION USING _RMSPROP _OPTIMIZER_IEEE.docx (536.1 Kb, 10/12/2024, 12:01:08 PM)