Banana Classification using Deep Learning Techniques in the Sri Lankan Context

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Abstract

Bananas are one of the most widely consumed fruits worldwide, and they come in various shapes, sizes, and colors. Bananas are one of the few tropical crops that have not been bred successfully, and all presently cultivated varieties are natural selections. Traditionally, human experts perform the classification based on visual inspection, which can be subjective and time-consuming. Therefore, developing an automated system that can accurately classify bananas based on visual features would be highly beneficial. Feature engineering became easier after the Convolutional Neural Network (CNN) was developed. Five distinct varieties of bananas were categorized in this proposed work using the CNN model. To improve classification performance, many training images are needed when using the CNN model for classification. Both the original and enhanced images were used to train and evaluate the suggested CNN model. During training, the CNN model achieved an overall validation accuracy of 87%.

Keywords: Banana, Deep Learning, CNN, Classification, Augmentation