

APPLYING CONVOLUTIONAL NEURAL NETWORK (CNN) TO SORT THE QUALITY OF EXPORT BANANA

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ABSTRACT

Banana is a fruit that is widely consumed in fresh form. The problem of consumption of bananas in fresh form is easily damaged and quickly undergoes quality changes after harvest, because it has a high water content and its metabolic processes increase after being harvested. Apart from being consumed in the country, bananas are also one of Indonesia's exported products. In the export process, a banana sorting process is needed first, the process carried out is still manual so an algorithm is needed that can sort automatically. Therefore, this research makes an algorithm to sort automatically using Convolutional Neural Networ (CNN) using digital images. Imagery is used as a source of information that can be used to classify objects. One of the effective Deep Learning methods to use is CNN because of the high network depth and much applied to image data. CNN is a development of Multilayer Perceptron (MLP) which is designed to process two-dimensional data in the form of images. Automatic sorting using the CNN method is by classifying the quality of bananas to be feasible and not feasible. Based on the classification results using the CNN method on the image feasibility of bananas using a model that has been formed, there is one error in the classification of banana images with an accuracy rate of 95%.

Keyword: Banana, Convolutional Neural Network, Export, Deep Learning, Quality.