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Intelligent Grading System of Apple Using Neural Network Arbitration

Authors : Ebenezer Obaloluwa Olaniyi

Abstract : In this paper, an intelligent system has been designed to grade apple based on either its defective or healthy for production in food processing. This paper is segmented into two different phase. In the first phase, the image processing techniques were employed to extract the necessary features required in the apple. These techniques include grayscale conversion, segmentation where a threshold value is chosen to separate the foreground of the images from the background. Then edge detection was also employed to bring out the features in the images. These extracted features were then fed into the neural network in the second phase of the paper. The second phase is a classification phase where neural network employed to classify the defective apple from the healthy apple. In this phase, the network was trained with back propagation and tested with feed forward network. The recognition rate obtained from our system shows that our system is more accurate and faster as compared with previous work.

Keywords : image processing, neural network, apple, intelligent system
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