Fruits recognition based on texture features and K-Nearest Neighbor

ABSTRACT

Malaysia is well-known for its variety of fruits available in the country such as pineapple, guava, durian, apple, and watermelon. Therefore, it is important for us to get to know more about fruits so that we can take advantage of all the benefits that each fruit can offer. However, problems may arise where a person may know nothing about a particular fruit apart from only having an image of it. Most of the fruit encyclopedias nowadays still rely on text as search input. Furthermore, various features are commonly utilised for representation which can lead to high computational complexity. Therefore, to overcome these problems, a content-based texture-only fruits recognition that accepts an image as input instead of text is proposed. A framework which extracts five texture features (homogeneity, energy, entropy, correlation, and contrast) based on Gray-level Co-occurrence Matrix (GLCM) descriptor is constructed. k-Nearest Neighbour (k-NN) is used at the classifier model to determine the type of fruits. The conducted empirical study has shown that the proposed work has the ability to effectively recognize fruit images with 100% accuracy.