CLASSIFICATION OF FRUITS AND VEGETABLES USING K-NEAREST NEIGHBOR METHOD WITH EXTRACTION CHARACTERISTICS OF GRAY LEVEL CO-OCCURRENCE MATRIX

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ABSTRACT

Fruit is part of a plant that comes from the pistil of a plant and usually has seeds. While vegetables are legumes, leaves or grains that can be cooked. Fruits and vegetables have many variants that can be distinguished in shape, color and texture. Sometimes there are still difficulties that occur in distinguishing between types of fruits and vegetables that have almost the same texture, shape and color. Therefore we need a system that can help to facilitate the classification of fruits and vegetables. In this study, a classification of fruit and vegetable types was made based on texture. The methods used in this research are Gray Level Co-Occurrence Matrix (GLCM) and K-Nearest Neighbor (K-NN). The GLCM process is used for the feature extraction process, namely to get the characteristics of fruits and vegetables, while K-NN is used for the image classification process. Each training image weight value and test image will be compared by minimizing the Euclidean value. Research with this method produces an accuracy rate of 70.8% for K = 3, an accuracy value of 80.8% for K = 5 and an accuracy value of 77.6% for K = 7.

Keywords*: Fruits and vegetables, Gray Level Co-Occurrence Matrix (GLCM), K-Nearest Neighbor (KNN)*