ABSTRACT

THE IMPLEMENTATION OF GREY LEVEL CO-OCCURRENCE MATRIX (GLCM) ALGORITHM WITH K-NEAREST NEIGHBOR (KNN) METHOD FOR RICE QUALITY CLASSIFICATION BASED ON TEXTURE

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Image processing is a basic science of image identification based on characteristic one of them is texture characteristic. Texture characteristic on the image if there is a repeating pattern image which fills all areas of the image. These characteristics are the basis for the classification of the image based on the texture. There are several methods to obtain the characteristics of texture in an image, one of the method to obtain the characteristics of texture image is the co-occurrence matrix. The characteristics of texture obtained from the co-occurrence matrix method including the entropy, contrast, homogeneity, energy and dissimilarity. The results of these characteristics will be used for classification using KNN (K-Nearest Neighbor) method which determines the classification results of K nearest distance. The object being tested is the image of rice.

Based on the research that has been done can be concluded as follows: *KNN method can be used for the rice image classification with extracted results of Co-occurrence Matrix characteristic. Because the results of feature extracted data can be directly used for classification by grade and K predetermined value.*

Based on test results, the conclusions obtained are KNN method can classify the image properly, because the result of extracted data of rice texture characteristic going well with a 100% accuracy rate on existing images in the database and 97% with images that are not found in the database. For rice image KW 2 and KW 3 levels of accuracy

Keywords: *Image Texture, Feature Extraction, Co-occurrence Matrix, Classification, KNN, Rice*