ABSTRACT

The Leather industry is an industrial sector which until today continues to experience growth. Cow's leather is one of the basic staples that can be used as an ingredient to make shoes, bags, jackets, wallets and more that utilize samak leather as raw material. The leather is currently growing with many types with a variety of prices. The low level of public awareness about the types of leather can reduce the period of usage of the leather products and can be an opportunity for certain people that can disadvantage to the community. Therefore, an application that can help the community to be able to distinguish the types of cow's leather, such as :nubuck leather, pull up leather, crazy horse leather, full grain leather is needed.

In this research, author discuss about how to identify different kinds of tanning leather. There are a lot of methods that can be used for the classification process. In this research, author uses the Gray Level Co-occurrence Matrix (GLCM) and feature extraction method with the K-Nearest Neighbor (K-NN) classification method which have been pre-processed first.The process starts from preprocessing the acquired image, next the GLCM extraction method is done using the tested parameters, last classification is done using K-NN.

The testing is done by using 200 image of leather which consists of 50 image of Nubuck leather, 50 images of Pull Up leather, 50 images of Crazy Horse leather and 50 images of Full Grain leather. As a result, the best accuracy is 95.5 % with 1.7658s computational time by using the Gray Level Co-occurrence Matrix (GLCM) feature extraction method with the parameters: second order parameters (correlation, energy and homogeneity), at 0^0*, d=1 pixel, quantization level 8, eucledian distance and K=1.*

Keywords: Digital image processing, Leather, GLCM, K-NN.