

Abstract

Ear is one alternative in biometric recognition. Ear has advantages such as stability characteristics, where the distribution of color in the ear have the same level of uniformity. Besides the ear does not change in the shape of a long period of time. Another advantage of the use of the ear as a biometric identifier is required to apply a smaller cost than using other body parts and identification system used to build applications from ear detection can work more quickly and efficiently. This is why many researchers are developing applications based ear detection. There are many methods used to characterize the process of introduction of ears for each individu, one satunnya namely Scale Invariant Feature Transform method (SIFT). SIFT is an algorithm to detect and explain the local features in the image. In previous studies the use of SIFT and LVQ produces an accuracy of 82.5 %. In the present study the classification of images is done by using the K - Nearest neighbor (K-NN). K-NN can be implemented relatively easily than other methods, classification using k to classify objects based on the distance learning data closest to the object. Classification process will be obtained from the performance and the accuracy of the systemare made.

This study used data from 40 individu ear using a variety of angles. From the results aqcuation image, the image will dipreprocessing beforehand to get rid of the image of the ear is not necessary. After that will be done by using SIFT feature extraction. From the results of feature extraction will be obtained from the characteristic vector of each image. Characteristic vector of each image will be classified for each training data and test data image using the K - NN method. Tests will be done to try several settings K - NN input parameters and also tested the use of some variation of the amount of training data and test data. Obtained from the testing accuracy of 95% for the use of the input parameters $k = 1$ and the City Block distance.

Key Word : *Biometric, Ear Detection, Scale Invariant Feature Transfrom, K-Nearest Neighbor*