

ABSTRACT

Ear biometrics is one alternative that uses the physical characteristics of natural human to human identification. Ear biometrics has several advantages when compared with a face that has a more uniform distribution of colors so that almost all of the information conserved when changing the original image into a gray scale, reducing the spatial resolution and did not experience changes caused by changes in facial expression and age. Human ear will not develop after the age of eight years. Smaller ear shapes also allow the identification system can work more quickly and efficiently from the face.

The final task is aimed at designing a system that works for personal identification with a fast and precise accuracy. The system is made with one of texture analysis methods is the method of Gray Level Run Length (GLRL) to recognize the extraction of leaf traits on the human ear. There are 5 characteristic texture analysis used in this thesis is the SRE (Short Run Emphasis), LRE (Long Run Emphasis), RLU (Run Length Uniformity), GLU (Gray Level Uniformity), and RPC (Run Percentage). Image samples taken from 15 people (each person taken 10 samples consisting of 5 samples and 5 samples of the right ear left ear). The acquired image is converted to grayscale, feature extraction performed, and then perform an image recognition with Linear Discriminant Analysis (LDA).

From the results of performance testing system, it is known that the recognition performance of the human system through the image of the ear reaches 80.67% when the training data consist of 90 samples of ear and ear test data 150 samples with 90 samples taken ear training data that is the last 3 images from each ear respectively.

Keywords: biometrics, ear contour, GLRL method (Gray Level Run Length)