ABSTRACT

Palm print which is one of biometric characteristic of a person is unique, stable, immutability: hard to be destroyed except because of hard damage, and perennial nature: unchanged pattern of palm print even the owner getting older and older. The use of palm print as an identification tools resulting a better quality of recognition due to the larger surface of palm print than finger print and the easier data acquisition by using digital camera.

The design of palm's print identification system uses the method based on image processing such as contras stretching, cropping, edge detection, dilation, and rotation as an extraction technique of the palm print pattern to get its own characteristic vectors.

The system is examined using Matlab 7.8.0 as a helping tool. The testing sample is captured and is processed based on image processing to get the characteristic vectors of the sample. Then, characteristic vectors of the sample are compared with the database. Then, it will be recognized using K-Nearest Neighbor (K-NN). The output of this system is a decision of the identity of each palm print.

The testing of this system uses three parameters: variance of multiply vectors used in edge detection process, variance of numbers of segmentation cell for feature extraction, and variance of the value of k in the pattern recognition using K-Nearest neighbor. The best performance of the system is reached when the multiply vector=2.75, the numbers of segmentation cell=10 x 10, and the value of k=1, its accuracy can reached 85%.

Keyword: *Biometric, Palmprint, immutability, perennial nature, K-Nearest Neighbor*