

ABSTRACT

Security is one factor which used for operating system. That factor is important key to decrease crime and abusing system which will able to harm many people. One of that method for improve the level of security system is using biometric technology. In biometric system, every people has unique features to distinguished one people with the others. Many kind of biometric there are face, iris, retina, palmprint, DNA, fingerprint, signature, etc. In the last research, research of palmprint pattern used spatial domain which can must be completed.

The purpose on this final assignment, is for identify human based on palmprint, the way to get feature of palmprint pattern human which more accurate in spatial domain is used feature extraction using *fractal* method. Vector feature fractal used fractal lacunarity, fractal dimension, and both fractal lacunarity and fractal dimension. Then, after got feature from image, feature compared with feature in database. The step to classify feature of data is using *k-nearest neighbor classify*.

In this research, if we used more feature vector, we get higher accuracy. The result of testing data for right palmprint get the highest accuracy 87.78% with total the mean of time process is 1,8479s, and testing data for left palmprint get the highest accuracy 74.44% with total the mean of time process is 1,8385s.

Key word : security, biometrics, palmprint pattern, fractal, fractal dimension, fractal lacunarity, and k-nearest neighbor.