Abstract

Biometric is a method for people recognition by physical and behavioural characteristics. Each people owns their biometric characteristics in their body. Biometric characteristics that exist are iris, face, fingerprint, palmprint, vein and DNA. Biometric system that uses physical features on the outside (e.g palmprint, fingerprint) easily damaged and forgery. In this research, we use palm vein that can be obtained using an infrared rays camera. Palm vein located inside the body making it difficult to being duplicated and not easily damaged. Palm vein has been proven to be succeded as biometric feature [1, 5, 9, 13, 15].

In this research we use sampling point approach for feature extraction. From the palm vein pattern we extract the pattern into point set. The points are result of sampling from the line pattern. The point set are used in Iterative Closest Point algorithm as input. ICP algorithm has advantages in calculating the rotation and translation of the palm vein image. ICP algorithm will decrease the error problem from the rotation and translation of an image that can affect the system's accuracy.

The result shows the performance of the system based on accuracy and equal error rate. The accuracy reachs 94% for parameter setting sampling 3 pixel, threshold outliers 0.08, and ratio model and testing 3:3.

***Keywords**: Biometric, Palm Vein, ICP.*