Abstract

Fingerprints have a very unique pattern. So that there would be no human beings who have the same fingerprint pattern exactly. This is why fingerprints are used as someone's identity.

In this thesis, we developed a fingerprint identification system using Probabilistic Neural Network (PNN), which is a pattern classification method with a merger between the Statistical and Neural Networks. Same as the other Artificial Neural Networks, PNN also require the training process by doing pattern recognition. Decision on PNN is taken by using Bayes decision based on which class has the highest number.

In addition, this thesis also used Fast Fourier Transform (FFT) in the preprocessing phase. Improvement of image quality by using the FFT, can store the value or important information contained in that image. Thus, a fusion between the PNN and the FFT, are considered to be providing a good level of accuracy in the process of fingerprint identification

Keywords*: probabilistic neural network, Bayes, Fast Fourier Transform, the high-pass filter, fingerprints*