ABSTRACT

The unauthorized using of identity is a common problem in our society and cyber world, it insists the advent of new identification system. Secure identification technology such as biometric identification technology using fingerprint identification is one solution for that problem.

The algorithm of fingerprint recognition system is implemented by 2D Gabor filter and artificial neural network Adaptive Resonance Theory as the recognition part. The 2D Gabor filter is used to enhance the image from acquisition device and to capture both macro and micro features from the fingerprint image as a fixed length code. ART neural network is chosen because of its ability to receive new information without losing the previous info, similar to human brain work

The algorithm has been tested and compared with euclidean distance method. The result show that the enhancement block on the system can improve identification accuracy. The best recognition result is 92,67% for ART2 method and 96,67% for euclidean distance method.

Key word : *Biometric, Adaptive Resonance Theory, 2D Gabor Filter, feature extractor, identification ,fingerprint*.