ABSTRACT

Face recognition is a process to recognize and decide someone by his face. Face recognition technology include on biometric which use natural human behavior characteristics. Nowadays, face recognition can be use for many things for example: security, employee identity recognition, and crime subject identification. Face recognition also can be use to make many things more efficient and effective by reduce the using of password and identity card.

Identification system implemented using Adaptive Resonance Theory (ART) neural network models. ART neural network is capable to receive new information without forgetting the previous information, like as the way of human brain work. To be able to recognize face image, neural network need preprocessing and feature extracting. Extraction process with Principal Component Analysis to get the important feature information from face image and its value is taken as input to neural network. Learning of neural network is conducted to get the correct classification from data training a genuine face image. The face image can be recognized if it set in one of the class from training process.

From the testing result is obtained by level accuracy of face recognition system with the best classification is 96% for can be recognized a genuine face image, and around 80% – 100% for reject a forged face image.

Key word : Biometric, Adaptive Resonance Theory, neural network, Preprocessing, feature extracting, Principal Component Analysis.