

ABSTRACT

Identification techniques based on finger prints is one of biometric technologies that have been well known. The unique on it that surely different in each people gives a typical identity to the owner. During the actual implementation, varieties in slopes and dilatation on finger prints are often to be the cause of the unrecognizable in fingerprints identification processes.

Finger prints classifications are served the purpose of preparation phase in matching process to shorten the time of identification. The fingerprints quality correction algorithm is based on Gabor 2D filter that used to correct the quality of acquisition result. Next, The filter of Gabor 2D is also to be applied on the characteristic sampling techniques. The classifier process uses a binary classifier hat using Support Vector Machines (SVM) methods that has a high accuracy in characteristic classification. So it expected by using an algoritm that based on Gabor 2D filter and SVM method can solve the variety of slopes occurred problems. The variety of slope tolerance is focused on slopes between -30° until 30° .

From the simulation, based on the total finger prints tested, obtained the level accuracy are 81.85185 % for the image with slopes between -30° until 30° using OAO method, 87.03704 % for the image with slopes between -30° until 30° using OAA method, 84.44444 % for the image with no rotation using OAO method, 90 % for the image with no rotation using OAA method, 74.44444 % for the image with slopes -30° using OAO method, 84.44444 % for the image with slopes -30° using OAA method, 86.66667 % for the image with slopes 30° using OAO method, and 86.66667 % for the image with slopes 30° using OAA method. With good enough accuracy, SVM still could classified the fingerprint excellently, although the fingerprint have core point problem, dilatation problem and rotation problem.

Keywords: *Support Vector Machines (SVM), binary classifier, OAO, OAA, Gabor 2D, identification.*