Abstract

Every human being have unique part of their body, one of them is the ear. The unique part that become characteristic on every living thing was studied on biometrics. Biometric recognition technology this tima has used by many on image processing. Speeded Up Robust Feature (SURF) is a method on image processing to extract feature of keypoint on an image and took it to become a local feature. The local feature which is a vector, trained and classified using Support Vector Machine (SVM).

This research will analyze about the ability of SURF and SVM to recognize shape of ear to be indentified into which class it belong according to the belonging of the ear. In this research, there will be test to find the optimal image resolution for best result, the use of ASM on preprocessing to identified ear shape, comparison of using SURF and SURF-128 on the case of ear biometric, measuring the ability of ASM to classify data, and measuring system performance by calculate the time used to train and classify data.

From this research, it can be seen that ASM was not really fit to detect ear shape, but SURF and SVM was good enough if the ear cropped manually. In the 96 x 96 pixel image resolution case, with 140 data train, this system can classify data accurately on accuracy rate 98.57%.

Keywords: ear, biometric, ear recognition, Active Shape Model, Speeded Up Robust Feature, Support Vector Machine