Abstract

Biometric is one of many method for human detection based on unique behavior or physical characteristic, which different from one to another human. Some physical characteristics often used for biometric such as face, fingerprints, palms, and ears. Physical characteristics was chosen because it has a high level of uniqueness, so that almost no human being has the same physical characteristics with another human. Biometric recognition using ear, or usually called ear recognition, is one of the most recent biometric technique when it compared with other biometric such as fingerprint, face, or palmhand. However, the ear biometric has a very high level of uniqueness, so ear biometric can produce high accuracy. In fact, human's ear will not change from child to adult, making ear biometrics is more promising than other biometric.

In this final project, ear biometric will be done by taking pictures of the ear, three times for every human sample. Next, the unique feature point from every picture will extracted using *Scale Invariant Feature Transform* (SIFT) to produce vector for each unique point. There vectors will be classified by learning Vector Quantization method that previously has been trained with train data. The results show that using two training data for each human, can produce better result in accuracy, 77.5%. Compared with using only one traing data, that give result 70%. The result of this accuracy can improve to 82.5% by using manual cropping to the ear image, by removing other parts of the picture instead of ear.

Keywords : Biometric, Ear recognition, scale infariant feature transform, learning vector quantization