

## Abstract

Recognition system using biometrics has been extensively studied because it has many advantages compared to conventional system. Hand geometry and palmprint unimodal biometrics are exciting to be developed into a multimodal biometrics system because biometrics data collection can be done through the same single sensor, which uses a digital camera. In this Final Project research, tested several fusion scenarios, that are fusion at score, fusion at feature, and fusion at decision. Each scenario performance is tested and compared with unimodal biometrics. The main purpose of this research is to determine how much influence the fusion of biometrics to the system performance overall.

To obtain the hand geometry feature vector conversion image to *grayscale* process is carried out, which then conducted *thresholding*, and length measurements were taken from 16 points of hand geometry. While the palmprint feature vector is obtained by taking the ROI (*Region of Interest*) from *grayscale* image which then carried the *line detection* process, and then the *block processing* is performed. Data sets used in this research are 300 hand palm images from 50 users. Each user is taken 6 images, 3 for enrollment (reference) image and the 3 remaining for testing image.

**Keywords:** biometrics, unimodal, multimodal, hand geometry, palmprint, feature vector