Abstract

A biometrics-based security system is a security system that uses self-recognition technology using human body parts or behavior. This study uses the ear as a feature of biometrics. The image was taken or captured by using smartphone camera; the image was converted to grayscale and Gaussian Filter to reduce noise in the image. The extraction process done by three methods, they are: Canny Edge Detection, Hough Transform, and Oriented FAST and Rotated BRIEF (ORB). Canny Edge Detection is used to get the line in the ear, Hough Transform is used to look for ear circle shape. Invariant Moments to take the image value feature for both methods. ORB is used to search the ear keypoint, to get the feature value done by taking the ORB Feature. Identification process using Euclidean Distance for Canny Edge Detection and Hough Transform, meanwhile for ORB Method used Hamming Distance
calculation. Combining these three methods resulted in a match rate of 54%.

References


Index Terms
Keywords

Ear Biometrics, Canny Edge Detection, Hough Transform, Oriented FAST and Rotated BRIEF, Euclidean Distance.