

## Abstract

Biometric identification system is one method that aims to identify a person's identity automatically based on biometric characteristic. biometric characteristics may include iris, fingerprint, face, voice, or palm. Palm is one of the biometric characteristics that can be used to distinguish a person's identity, because everyone has different palm lines, shapes and sizes. Therefore, in recent years a lot of research done related to biometric identification system based on palm.

One of the main problems in the biometric identification system based on the palm is how to extract features automatically without using special devices, because it is the core of biometric identification system. Several information that can be used as the based of this system are the geometry and the lines of the palm. In this study, we examined the palms feature extraction based on it's geometry to find information, which includes finger width, finger length, palm width, and the ratio between the length of the middle finger, index finger and ring finger. By combining this information we can obtained a characteristic of palms that can be used to recognize a person.

The accuracy obtained in this system is 89.316% using the 23 Characteristics of palm geometry without normalization and with 0.035 threshold on 40 individuals. The characteristic that is used were the fingers length, finger width, and the width of the palm it self. In this experiment, the reduction of characteristics used has a great influent on the accuracy of the system. The test results showed the best accuracy at 35 individuals, with 90.05% accuracy.

**Keywords:** Identification system, Biometrics, hand geometry, feature extraction.