Abstract

Human fingerprints be affluent in particulars called minutiae, which be able to used as credentials marks for fingerprint authentication. The objective of this project is to build up a complete system for fingerprint verification through extracting and matching minutiae. To achieve excellent minutiae extraction in fingerprints with varying quality, pre-processing in form of image enhancement and binarization is first applied on fingerprints before they are evaluated. Several methods have been joint to build a minutia extractor and a minutia matcher. Minutia-marking with false minutiae removal methods are used in the work. An alignment based elastic matching algorithm has been urbanized for minutia matching. This algorithm is capable of finding the correspondences between input minutiae pattern and the stored template minutia pattern without resorting to comprehensive search. Performance of the developed system is carried out by using FFT and DCT, and the results are analyzed on a data base with fingerprints from different people.


**Index Terms**

Computer Science  
Information Sciences

**Keywords**

Image Enhancement, Minutiae Extraction, False minutiae, Minutiae matching, FFT, DCT.