

## **REVIEW ON BIOMETRIC FINGERPRINT IDENTIFICATION METHODOLOGY BY VARIOUS RESEARCH TECHNIQUES**

**NITIKESH S. THAKARE & AVINASH P. WADHE**

Department of Computer Science & Engineering, SGBAU, Amravati, Maharashtra, India

### **ABSTRACT**

Most automatic systems for fingerprint comparison are based on minutiae matching and minutiae extraction. Minutiae are local discontinuities in the fingerprint pattern recognition system. A more than 150 of different minutiae types have been identified. In practice only ridge ending and ridge bifurcation minutiae types are used in fingerprint recognition. Minutiae matching is the step which comes after minutiae extraction and it is here that we match the minutiae obtained from two sample fingerprint images and test whether they are from the same fingerprint or not. However, a crucial step that needs to be carried out before we can use brute force and match minutiae on two images is alignment of the images. Alignment is necessary so that we correctly match the images. We also need to take care of difference in positioning of minutiae due to plastic deformations in the finger. The algorithms prevalent for minutiae-matching either include the use of details of ridges on which minutiae are present, or use the Hough transform. Both these methods and most other methods are difficult to implement and several complicated functions need to be implemented which are discussed herewith. This survey remains a work in progress. Cases are evolving as rapidly as the technology. There are few rigorous evaluations of the merits of an identity-driven approach to development, and in particular the use of biometrics. More research is needed to assess and add to the impressions given in this paper.

**KEYWORDS:** Alignment, Descriptor, Matching Score, Fingerprint, Minutiae Matching