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ECULIDEAN DISTANCE BASED FINGERPRINT MATCHING

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Abstract

Forensic Science is an art and science of a print made by an impression of ridges in the skin of a finger, often used for biometric identification in criminal investigation. Generally, the law enforcement agencies uses system like AFIS (Automatic Fingerprint Identification System) where reference fingerprints are stored in database which is further used to match with latent fingerprints recovered from actual crime scene. There is high rate of rejection of latent fingerprints since they are found in damaged condition due to blood spills, oil spills, wet surface, snow, dust, etc that damages their quality and hence individuality is lost. Verification of such mutilated fingerprints against stored reference fingerprint can be done using Laplacian, Gaussian, minutia-based, etc methods. Each such method has their own advantages and disadvantages. The paper emphasis on the use of Gabor filters for fingerprint identification. The fingerprint matching is done by extracting the Finger code from both reference and latent fingerprints and then finding the Euclidean distance between the two corresponding finger codes. After proper training the system, the result obtained provides highest rate of recognition.

Keywords : Biometrics, Gabor filters, Finger code,Eculidean distance,latent fingerprint.