Abstract

In the field of computer vision, image enhancement is one of the most important and critical stage, which eventually or indirectly decides the final results in the boolean form, as far as image recognition or comparison is concern, fingerprint recognition system is also the part of computer vision and considered as one of the most matured and accepted biometric system, which implies the matching of fingerprint impression with template data. The normal issue which arise in the making such systems is the noise in input fingerprint image which actually depends upon the devices i.e. used to capture fingerprint image. In this paper we demonstrate the techniques for fingerprint image enhancement in frequency domain, after getting back in spatial (time) domain, we exact the ROI from the output image of frequency domain using least square approximation method and finally we extract minutiae from fingerprint image using cross number (CN) [5] and compare with template data in post-processing stage. The demonstration has been made under the MATLAB's background and the experiments conducted on FVC 2002 fingerprint dataset of University of Bologna [1]
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Index Terms

Computer Science

Image Processing

Keywords

- Minutiae extraction
- Fingerprint recognition
- Minutiae matching
- False Minutiae
- Least square estimation
- Fourier transformation