The issue of identity management has continued to pose serious security challenge to different organizations. To curb this challenge, emphasis is now been shifted from what you know or have to what you are leading to increasing use of fingerprint, iris voice, face image and other physical biometrics for human verification and identification. Among these, fingerprint has proved most reliable and dependable. This has precipitated the emergence of a good number of Automated Fingerprint Identification Systems (AFIS) with different forms of matching algorithms. This paper presents the formulation and implementation of a minutiae based fingerprint pattern matching algorithm. The algorithm relies on the spatial characteristics defined over the $11 \times 11$ neighbourhood of the fingerprints core points to determine the matching scores, which exhibit the degree of resemblance for any two images. Results obtained from the implementation of the proposed algorithm show its good performance. Comparative analysis of the obtained FNMR, FMR and computation time values with values obtained from some other research works shows a superior performance of the proposed system.
Fingerprint Matching using Neighbourhood Distinctiveness

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Index Terms

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