Novel Shift-Phase Transformation based Cancelable and Irrevocable Biometric Template Generation for Fingerprints

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Abstract

Cancelable biometrics expresses multiplicity. Now-a-days conventional authentications and identifications are advanced with biometrics. Since biometrics is unique in nature of a person, he/she must be aware on tracking the original features and also the cross matching of the same when his/her biometrics is used in different applications; and once the biometrics is compromised, those cannot be reset again. These problems are addressed by our proposed novel approach called "Shift-Phase Transformation". It is designed for irrevocable and cancellable biometric template generation. In this paper, the proposed method is used to generate a cancelable and irrevocable biometric template for fingerprint. Series of experiments are followed to test the performance of the proposed method. The factors considered for performance evaluation are the cross matching rate through ROC (using GAR and FAR), Cancelability, Irrevocability, Security, Average time of template generation and matching and also space complexity. The experimental results show the efficiency of proposed method and also show that it is a best method.

References
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Index Terms

Computer Science

Applied Sciences

Keywords

Bit-shifting Cancellable template Chaff Points Irrevocability Phase