Abstract

The fuzzy commitment scheme is one of most popular biometric cryptosystems that aim at securing cryptographic keys using biometrics. Because of the high recognition accuracy exhibited by the iris, iris-based fuzzy commitment schemes, among other modalities, provide the most practical performance rates. Unfortunately, existing iris-based fuzzy commitment schemes do not incorporate noise masks, generated along with iris-codes to highlight unwanted regions of the iris, because there is no way to know the mask of the decoding iris sample in advance. Therefore, the decoding accuracy of iris-based fuzzy commitment schemes is much less than the recognition accuracy of the underlying iris recognition system. This paper presents an iris-based fuzzy commitment scheme that uses the noise mask of the encoding iris sample at both encoding and decoding stages. Experimental results show that the proposed scheme provides a remarkable improvement in the decoding accuracy of iris-based fuzzy commitment schemes.

References

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Index Terms

Computer Science
Applied Sciences
Keywords

Biometric Cryptosystems  Fuzzy Commitment Scheme  Iris Codes