Abstract

Recently, chaos based encryption techniques introduce several merits over the classical techniques such as extensive security levels, complexity and fast speed. In this paper, a chaotic based cipher that incorporates both Logistic chaotic map and Tent map is proposed. An external biometric key of length 256-bits is employed to derive the initial seeds of the applied chaotic maps. In the encipher stage, the pixels information are masked based on an iterative structure using a data-dependent feedback mechanism that mixes the current cipher parameters with the previously enciphered pixels. Accordingly, the relation of the enciphered image and the original image is confused and the suggested cipher can defeat any attack. The experiments reveal the high efficiency of the proposed algorithm in addition to its sensitivity to secret key changes and its resistance to different types of attacks.
References

18. Fu, Ch., Zhang, Z., Chen, Z., and Wang, X. 2007. An Improved Chaos-Based Image
Chaos Encryption Algorithm using Key Generation from Biometric Image


Index Terms

Computer Science

Algorithms

Keywords