عنوان مقاله:

Fingerprint image cryptography based on multiple chaotic systems and Contourlet Transform

نویسنده:

Mohammad Jafar Dehghan - *Sama technical and vocational training college, Islamic Azad University, Kazerun Branch, Kazerun, Iran*

خلاصه مقاله:

Fingerprint recognition is a reliable solution in user authentication systems. Nevertheless, the security and secrecy of the users' data are a concern in today's biometric systems and most of the security attention is focused in biometric template protection to avoid identity theft. In recent years, several approaches have been presented where the main objective is to have the biometric revocable, but almost all them have failed in verify their security and robustness. In last years, chaotic systems have been proposed in cryptography due they have several properties related with cryptography properties such as extreme sensibility on initial conditions with confusion and ergodicity with diffusion. This paper presents a new multiple chaos-based biometric image cryptosystem for fingerprint security. This encryption algorithm is constructed with two chaotic systems, which consist of one 1-D and one high- imensional 3-D chaotic system and Contourlet transform. This algorithm enhances the security strength of biometric image cryptography that incorporates single chaos and multiple chaotic systems. The advantage of the proposed scheme is that it possesses a secret key space large enough to empower the security strength to protect fingerprint image, which is enough to prevent anybrute-force attacks.

کلمات کلیدی:

Fingerprint Image Encryption, Chaotic Systems, Contourlet Transform

لینک ثابت مقاله در پایگاه سیویلیکا:

https://civilica.com/doc/567328