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SECURE BIOMETRIC CRYPTOSYSTEM USING FINGER CODE

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ABSTRACT

Biometric cryptosystems combine cryptographic security with Biometrics-base authentication. These authentication systems are more user-friendly and more reliable since biometric data cannot be lost, forgotten, or guessed. When cryptography is combined with biometrics, the digital signature created by a user is linked with him/her more accurately. A secure fingerprint authentication method is proposed here. In this method, a non invertible transformation is used to generate a finger code from a set of minutiae points. This is linked with a key to produce the helper data. The key is reproduced only when the user submits his biometric for authentication. Since the helper data does not reveal any information about the biometric or the key, it is quite difficult for an attacker to procure any of these. In order to accommodate the variability in biometric data, error correction is applied. The proposed algorithm has been tested with DB1 (FVC 2000) dataset which shows the feasibility of the technique in practical usage.

KEYWORDS: Biometric Cryptosystem, Finger Code, Feature Vector, Minutiae Points