A New Cryptosystem based on Fingerprint Features

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Abstract

Data encryption has become more important in the world of information, in order to secure the information during communicating or transmitting and to prevent an illegal person from achieving on the sensitive information. In this paper, fingerprint encryption algorithm is proposed which is used to encrypt data. Fingerprint image is used to generate three types of fingerprint keys which are derived from different types of fingerprint features. These keys are (bifurcation, ending and minutiae keys).

The proposed fingerprint encryption algorithms use the fingerprint keys and table in encryption and decryption process. This method used the fingerprint key with a simple equation in order to generate the encryption key. The encryption key used to encrypt and decrypt data.

The results show three different cipher texts in hexadecimal form which are encrypted by using the new algorithm. The differences among these texts are very large. The large differences due to use a larger look up table with (256x256) dimensions in encryption. The simulation results of
the new encryption method gives high security with a good performance.

References


Index Terms

Computer Science Security

Keywords

Encryption, decryption, plaintext, ciphertext, fingerprint.