Title: Biometric Cryptosystem Scheme for Internet of Things using Fuzzy Commitment principle.

Authors:

Atef Bentahar; Abdallah Meraoumia; Hakim Bendjenna; Salim Chitroub; Abdelhakim Zeroual

Abstract

Recently, the ensuring security by biometric authentication/identification presents a big challenge for network designers. This precious biometric information have to be itself protected against fraudulent uses, especially during the remote authentication and data exchange in wireless mesh networks such as the Internet of Things (IoT). This paper presents a securing biometric cryptosystem for IoT based on fuzzy commitment principle which is suitable of the connected things due to their low processing and memorization capacity. Our scheme, which is based on fingerprint modalities, can be decomposed into two parts. Firstly, at the sender side, a biometric feature vector is extracted using DWT technique and then the data is encrypted in order to transmit via internet. Secondly, at the receiver side, an authentication protocol was used to authenticate the things and decrypt the received data. The obtained results, using a popular fingerprint dataset, show that the proposed scheme is more secure, fast and points at increased authentication accuracy.