

Abstract:

Unclonable identity, Security, and privacy issues are becoming fundamental requirements for most smart application environment. Recently, several state-of-the-art approaches have been proposed to deal with secured combined user-Smartphone identification. In this paper, we propose a new approach to automatically secure the joint-identity of a Smartphone and its user/owner. The joint identification is reached by linking the user's individual/unique hand movement with an embedded clone-resistant Smartphone identity. The smartphone identity is created as a Secret Unknown Cipher which is manufacturer and possibly operator independent. It is a permanent, unique and clone-resistant physical Smartphone-device identity. The proposed approach creates also a user-dependent biometric identity with relatively high accuracy based on machine learning algorithms. The security against several attacks is evaluated and showed that the proposed approach is robust and able to offer many attractive solutions in future real field applications.