Cancelable and hybrid biometric cryptosystems: current directions and open research issues

ABSTRACT

Cancelable and hybrid biometric cryptosystems are two techniques used to offer protection against the security and privacy challenges faced by users of biometric authentication systems. The main objective of this paper is to present a critical review of current and emerging trends as well as open research issues in cancellable and hybrid biometric systems. The study examines cancelable biometrics under two main categories, namely non-invertible transformation and biometric salting. It also explores hybrid cryptosystems as means of providing improved template security and user privacy. The review focusses on the modes of operation, performance accuracy, security and privacy of various types of cancellable and hybrid biometric cryptosystems. It also provides a more comprehensive survey of latest research works in cancellable and hybrid biometric cryptosystems than existing review papers in these fields. The paper will provide readers with up-to-date information on current directions and open research issues in cancelable and hybrid biometric cryptosystems.

Keyword: Biometrics; Biometric cryptosystem; Privacy; Security