A secure and privacy preserving iris biometric authentication scheme with matrix transformation

ABSTRACT

Biometric authentication is the use of unique human features to provide secure, reliable, friendly and convenient access to an environment or a computer installation. However, the use of biometrics as a means of authentication exposes legitimate users to security threats, privacy attacks and loss of identity. This paper proposes and implements a novel non-invertible transformation technique known as matrix transformation. Matrix transformation is a simple but powerful and effective method to achieve template revocability and prevent the recovery of original biometric data from secured templates. The approach provides a high level template security and user privacy. It is also robust against replay attack, cross matching and loss of identity.