
# AN ONLINE BIOMETRIC AUTHENTICATION SYSTEM BASED ON EIGENFINGERS AND FINGER−GEOMETRY (ThuAmOR11)

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**Abstract :**

A novel approach to personal authentication using the fusion of eigenfinger and finger−geometry features at the score−matching level is presented in this paper. The online biometric system integrates finger−geometry features extracted from the four fingers and eigenfingers features extracted by means of the Karhunen−Loève (K−L) transform applied to the four finger subimages. The system has a liveness detection module, which uses an IR image of the dorsal surface of a hand. Authentication experiments were conducted on a database consisting of 1270 hand−images (127 persons). The verification results, EER = 0.04% and minimum TER = 0.04%, suggest that the system can be used in medium/high−security environments.

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