Quaternion Based On Cancelable Biometrics.

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Abstract

The current paper presents a novel cancelable face recognition scheme based on quaternion mathematics. The main idea of the proposed model is to mask the nature of faces prior to use in the face recognition process. The objective of this process is to keep the privacy of users during the initiation biometric data and the biometric verification process in case of data base compromising wherein it is possible to change the saved biometric templates while the color face image is used to compose a quaternion. Subsequently, a mask image is used in another quaternion. Quaternion multiplication and thus quaternion inverse are applied to generate the cancelable templates. The performance analysis of the proposed approach reveals that low EER and large area under ROC curve which are the required high index templates

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