A New Approach to Heart Sounds Biometric Recognition Based on Gram-PNN

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The output of the DWT block is apt to represent a considerable burden for the classification block and to degrade its performance.

Our approach to overcome these difficulties is based on a representation of denoised PCG input trace as a linear combination of Gram polynomials. Coefficients of the combination are determined so that it represents the best approximation of the denoised PCG input trace in the least squares sense. We regard the lower order coefficients (thirty-two) as features extracted from the original PCG trace.

III. Result

We evaluated the systems in terms of recognition rate. Figure 3 shows the 32 features derived from the decomposition process for two replicates measured on the same person, as a function of four distinct people.

The figures show a high similarity between the images taken on the same people and a marked difference between different subjects, obtaining an average error of about 14%. In conclusion, in this paper we proposed a new approach to human identity based on PCG. Compared to the methods proposed in the literature as to date, the technique proposed is very interesting from the point of view of performance.

REFERENCES