



Low-Resolution Face Recognition with Deep Convolutional Features in the Dissimilarity Space

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Abstract

In video surveillance and others real-life applications, it is usually needed to match low resolution (LR) face images against high resolution (HR) gallery images. Although extensive efforts have been made, it is still difficult to find effective representations for low-resolution face recognition due to the degradation in resolution together with facial variations. This paper makes use of alternative representations based on dissimilarities between objects. Unlike previous works, we construct the dissimilarity space on top of deep convolutional features. We obtain a more compact representation by using prototype selection methods. Besides, metric learning methods are used to replace the standard Euclidean distance in the dissimilarity space. Experiments conducted on two data sets particularly designed for low-resolution face recognition showed that the proposal outperforms state-of-the-art methods, including some neural networks designed for this problem.

Keywords: Face recognition, Low-resolution Dissimilarity representation, Convolutional networks

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