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Abstract

Face recognition has received significant attention from re-searchers in biometrics, pattern recognition and computer vision Communities. Fixed point implementation has limitless advantages than Floating point implementation, i. e. suitable for hardware design, low computational complexity, high speed, less memory required to store, low power consumption & easy in encoding. Hence fixed point implementation (Integer Wavelet Transform) is best candidate than floating point implementation (Classical Wavelet Transform). There are many different integer wavelet filters which can be used in the transformation stage and the choice of the filter would have some influence on the accuracy rate of the Face Recognition. This paper proposes a PCA on Integer Wavelet domain for face retrieval system which requires less memory as well with less computational complexity than the traditional methods like PCA and Fisher approaches. Aiming at the LL band as feature of image, a feature extraction and image retrieval algorithm using various Integer Wavelet Transform (IWT) is proposed. Since LL subband of wavelet decomposition becomes the input for PCA hence the memory usage can be greatly reduced. All tests and experiments are carried out by using MATLAB as computing environment and programming language. Experimental result shows that the proposed recognition system with very good performance nearly 98% as recognition accuracy.

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