

IMAGE RESOLUTION ENHANCEMENT BASED ON DWT AND SWT

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Abstract

This relates to image resolution enhancement and in particular, but not exclusively, to resolution enhancement for frames of a video sequence. Image resolution enhancement in the wavelet domain is a relatively new research topic and recently many new algorithms have been proposed. Discrete wavelet transform (DWT) and Stationary wavelet transform (SWT) is one of the recent wavelet transforms used in image processing. DWT decomposes an image into four subband images, namely low-low (LL), low-high (LH), high-low (HL), and high-high (HH). Another recent wavelet transform which finds its appearance in several image processing applications is stationary wavelet transform (SWT). SWT is similar to DWT but it does not use down-sampling, hence the subbands will have the same size as the input image. The quantitative and visual results shows the superiority of the proposed technique over the conventional image resolution enhancement techniques.

Keywords : Discrete wavelet transform, image super resolution, stationary wavelet transform, interpolation.