



A new low-complexity patch-based image super-resolution

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Mots-clés	chemical analysis [6], Image Enhancement [7], image representation [8], Image Resolution [9]
Résumé en anglais	<p>In this study, a novel single image super-resolution (SR) method, which uses a generated dictionary from pairs of high-resolution (HR) images and their corresponding low-resolution (LR) representations, is proposed. First, HR and LR dictionaries are created by dividing HR and LR images into patches. Afterwards, when performing SR, the distance between every patch of the input LR image and those of available LR patches in the LR dictionary are calculated. The minimum distance between the input LR patch and those in the LR dictionary is taken, and its counterpart from the HR dictionary will be passed through an illumination enhancement process resulting in consistency of illumination between neighbour patches. This process is applied to all patches of the LR image. Finally, in order to remove the blocking effect caused by merging the patches, an average of the obtained HR image and the interpolated image is calculated. Furthermore, it is shown that the stabe of dictionaries is reducible to a great degree. The speed of the system is improved by 62.5%. The quantitative and qualitative analyses of the experimental results show the superiority of the proposed technique over the conventional and state-of-the-art methods.</p>
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Liens

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