



Improved interpolation kernels for super resolution algorithms

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Mots-clés	Resolution Enhancement [6], Sampling kernels [7], sampling theory [8], upsampling [9]
Résumé en anglais	<p>Super resolution (SR) algorithms are widely used in forensics investigations to enhance the resolution of images captured by surveillance cameras. Such algorithms usually use a common interpolation algorithm to generate an initial guess for the desired high resolution (HR) image. This initial guess is usually tuned through different methods, like learning-based or fusion-based methods, to converge the initial guess towards the desired HR output. In this work, it is shown that SR algorithms can result in better performance if more sophisticated kernels than the simple conventional ones are used for producing the initial guess. The contribution of this work is to introduce such a set of kernels which can be used in the context of SR. The quantitative and qualitative results on many natural, facial and iris images show the superiority of the generated HR images over two state-of-the-art SR algorithms when their original interpolation kernel is replaced by the ones introduced in this work.</p>
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