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Improved Super-Resolution Using Deep Denoising Convolutional Neural Network

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Abstract : Super-resolution is the technique that is being used in computer vision to construct high-resolution images from a single low-resolution image. It is used to increase the frequency component, recover the lost details and removing the down sampling and noises that caused by camera during image acquisition process. High-resolution images or videos are desired part of all image processing tasks and its analysis in most of digital imaging application. The target behind super-resolution is to combine non-repetition information inside single or multiple low-resolution frames to generate a high-resolution image. Many methods have been proposed where multiple images are used as low-resolution images of same scene with different variation in transformation. This is called multi-image super resolution. And another family of methods is single image super-resolution that tries to learn redundancy that presents in image and reconstruction the lost information from a single low-resolution image. Use of deep learning is one of state of art method at present for solving reconstruction high-resolution image. In this research, we proposed Deep Denoising Super Resolution (DDSR) that is a deep neural network for effectively reconstruct the high-resolution image from low-resolution image.

Keywords : resolution, deep-learning, neural network, de-blurring
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