Abstract

The paper deals with image denoising with a new approach towards obtaining high quality denoised image patches using only a single image. A learning technique is proposed to obtain highly correlated image patches through sparse representation, which are then subjected to matrix completion to obtain high quality image patches. This paper show a framework for denoising by learning an appropriate basis function to describe image patches after applying transform domain method on noisy image patches. Such basis functions are used to describe geometric structure. The algorithm maps have been applies on LR patch space to generate the HR one, generating HR patch. Using this strategy, more patch patterns can be represented using a smaller training database. In super resolution (SR), the goal is not sparse representation, but sparse recovery. Furthermore try to make some modify on local window before perform PCA transform on it this modify include, change number of iteration according to the amount of noise on image additionally using the benefited of steering kernel regression (SKR) to prepare the noisy image before apply LPG-PCA. While kernel regression (KR) is a well studied method in statistics and signal processing, KR is identified as a nonparametric approach that requires minimal assumptions, and hence the framework is one of the
appropriate approaches to the regression problem.

Referen
ces

- Jianchao Yang, Student Member, IEEE, John Wright, Member, IEEE, Thomas S. Huang, Fellow, IEEE, and Yi Ma, Senior Member, IEEE, 'Image Super-Resolution Via Sparse Representation'; IEEE TRANSACTIONS ON IMAGE PROCESSING, VOL. 19, NO. 11, NOVEMBER 2010.
- Jianchao Yang, Student Member, IEEE, John Wright, Member, IEEE, Thomas S. Huang, Fellow, IEEE, and Yi Ma, 'Image Super-Resolution Via Sparse Representation'; IEEE TRANSACTIONS ON IMAGE PROCESSING, VOL. 19, NO. 11, NOVEMBER 2010.
- Subhasis Chaudhuri, Manjunath V. Joshi. 'Motin-Freesuper-Resolution';
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