

组约束与非局部稀疏的图像去噪算法

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摘要: 现有的非局部稀疏表示去噪算法大多严格依赖于块匹配, 且其去噪性能受制于匹配的相似块的数量. 鉴于此, 提出了组约束与非局部稀疏的图像去噪模型. 模型在非局部稀疏的基础上加入了分组约束, 增强了图像块之间的非局部相似度, 块匹配更加精确. 实验表明, 模型无论是在视觉效果还是峰值信噪比上均具有较好的性能.

关键词: 图像去噪; 非局部相似; 稀疏表示; 分组约束

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Image Denoising Algorithm Based on Nonlocally Sparse Representation and Group

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Abstract: The most existing denoising algorithms based on nonlocal sparse representation are strictly dependent on patch matching, and the denoising performance is subject to the numbers of similar patches. So a image denoising algorithm based on nonlocally sparse representation and group is proposed. The group-based constraints is introduced to the nonlocal sparse representation, which can enhance the nonlocal similarity between image patches and the patch matching is more accurate. Experiments show that the model has a good performance in both visual effect and peak signal to noise ratio.

Key words: image denoising; nonlocal similarity; sparse representation; group-based constraints

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