Image De-blurring and Supper-Resolution by Adaptive Sparse Domain Selection and Regularization

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Abstract

The method of total variation is used as a significant and competent image prior model in the regularization based area of image processing. However, as the model showing total variation supports a piecewise steady explanation, this process is classify below high intensity noise in the level areas of the picture is often poor, and a small number of pseudo edges are produced. Under this work we build up a spatially adaptive total variation model. Initially, we extract the spatial data based on each and every pixel, then two filtering process are combined to control the collision of pseudo edges. It also includes, the spatial information weight is build and classified with k-means clustering, and the cluster controls the center value of regularization strength in every region. The tentative results, of both simulated as well as genuine datasets, exhibit that the projected methodology can effectively diminish the pseudo edges formed by the total variation regularization in the flat areas, and maintain the limited smoothness of the HR images. The proposed region based spatial information adaptive variation model can effectively reduce the cause of noise on the spatial data extraction and maintain strength with changes in the noise intensity in the SR process as compare to traditional pixel based spatial information
adaptive methodology.

References


Index Terms

Computer Science Image Processing
Keywords

Total variation, regional spatially adaptive, Super resolution, High resolution, Majorization-minimization.