

Supplemental Materials: On Schatten-q Quasi-Norm Induced Matrix Decomposition Model For Salient Object Detection

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In this supplementary material, we give the ablation study of each regularization term to prove effectiveness for the new model.

Firstly, we show the performance of detection using nuclear norm, Schatten-1/2 and Schatten-2/3 regularizations respectively in Figure 1 (as shown in page 2). It is easy to find that $\|\cdot\|_{S_{1/2}}^{1/2}$ and $\|\cdot\|_{S_{2/3}}^{2/3}$ gives more accurate detection than $\|\cdot\|_*$ when the background is complex. And the more complete foreground objects indicate that the Schatten-1/2 and Schatten-2/3 regularizations can take advantage of the inter-correlation between elements in salient objects.

Secondly, the ability of weighted group sparsity regularization for salient region are represented in Figure 2 (as shown in page 2). Obviously, the weighted group sparsity regularization has more potentiality in detecting accurate and complete foreground objects.

Finally, Figure 3 (as shown in page 2) shows the ability from Laplacian term. It is clear that this regularization is helpful in enlarging the distance between salient object and background in image.

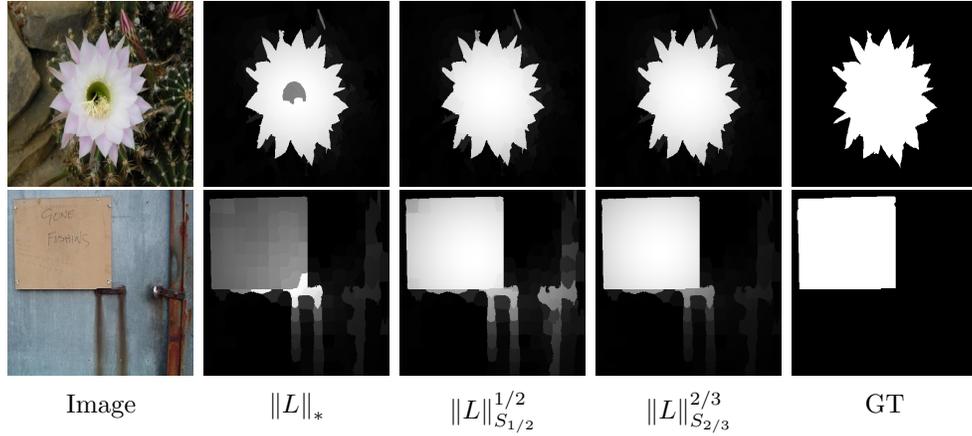


Figure 1: The comparative results using nuclear norm, Schatten-1/2 and Schatten-2/3 regularizations respectively.

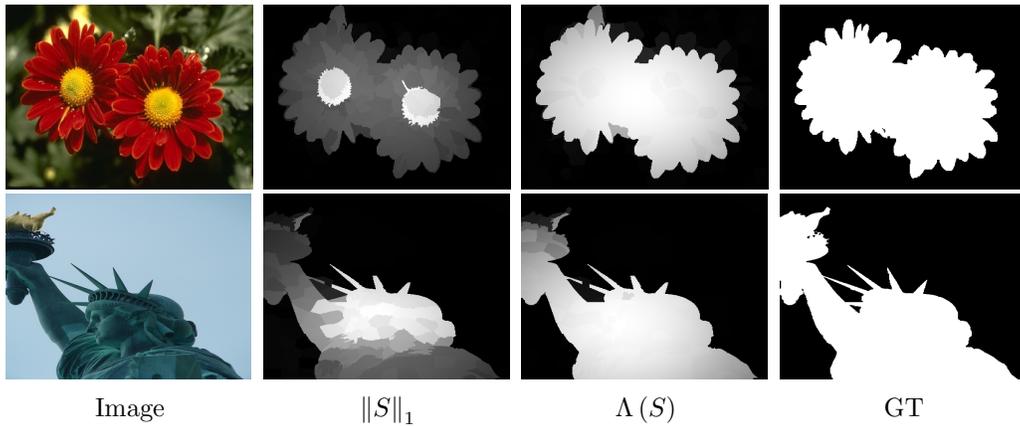


Figure 2: The comparative results using l_1 -norm and the weighted group sparsity regularization.

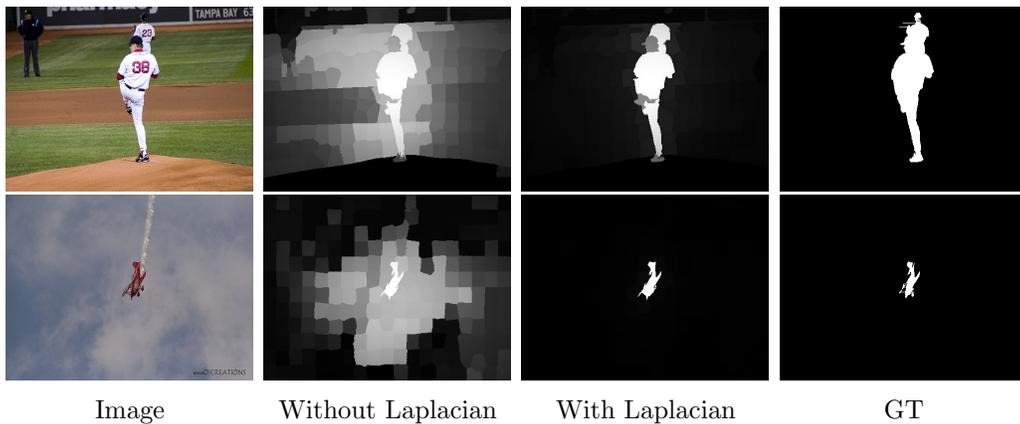


Figure 3: Salient objects obtained without Laplacian term and with Laplacian term respectively as well as ground truth.