

8. Conclusion and Future work

We proposed a novel technique to reconstruct large missing regions in the natural images using seam carving. This technique can be used to recover large missing regions with high texture contents around them. Since most of the existing methods cannot recover large missing regions, the size of the missing region is reduced by using seam carving approach. Next TEBI method is used to recover the missing region.

Additionally, MSEM is used to recover the seam lines after adding them back to the inpainted image. This technique has been tested on 100 natural images with visually acceptable results. Furthermore, the proposed method shows better performance than using the EBI method without the resizing methods as in [8] and [20].

In the future, better energy functions can be used to define the seams in an image without changing its contents.

In order to develop a seamless application, it is better to have an automatic technique for reducing the size of the missing areas using seam carving method based on the relation between the direction of seams and the geometry direction in the surrounding areas of the missing region. The gradient magnitude can be used to study the geometry direction of surrounding areas which help to choose a good direction for the seams. Also, this work can be enhanced by using other kinds of PDE methods. Furthermore, we aim to use TDA approach to check the quality of different inpainting methods instead of using only statistical measurements. Finally, this technique can be extended to recover bigger missing regions.

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