

عنوان مقاله:

Improved Content Aware Image Retargeting Using Strip Partitioning

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خلاصه مقاله:

Based on rapid upsurge in the demand and usage of electronic media devices such as tablets, smart phones, laptops, personal computers, etc. and its different display specifications including the size and shapes, image retargeting became one of the key components of communication technology and internet. The existing techniques in image resizing cannot save the most valuable information of images on display devices with different resolutions. Seam carving is a standard technique for content-aware resizing of images and videos with negligible distortion. However, seam carving resize high-resolution videos and high quality images with high computational complexity; this limits its real-time applications. In this paper, we present a novel approach to reduce seam carving process time. In the proposed technique, the image was split into three equal parts: upper-middle-lower (or right-middle-left) using horizontal or vertical strips. The middle strip was analyzed by original seam carving technique. For other strips (upper-lower), the seam was obtained employing Dijkstra fixed start point technique. In our proposed technique, unlimited Dijkstra depth search was replaced with a limited depth search. It enhances the computational efficiency of Dijkstra technique for the upper and lower strips. The experimental results showed much better computational efficiency than the current enhanced seam carving techniques. These results indicate that computational complexity is superior, while still maintaining the output quality of the original seam carving method.

کلمات کلیدی:

Seam Carving, Image Resizing, Image Retargeting, Dijkstra Method, Strip Partitioning

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