Optimized Image Resizing using Piecewise Seam Carving

Abstract

Seam Carving, the popular content aware image resizing technique removes seams of low energy iteratively without considering the global visual impact of the image. It is computation intensive. Sometimes seams unavoidable pass through the ROIs and distort their geometric shapes. The ROIs of low energy cannot sustain seam carving. We proposed a piecewise approach which can preserve the ROIs of low energy and minimize shape distortions. It can take advantage of parallel algorithms to improve speed. It is further optimized by using a saliency map to automatically identify the ROIs and segment the image, in addition with the interactive one. It is hybridized with a shift map editing approach to adjust structure deformations.

References

- Jacob Stultz, Prof Alan Edelman, "Seam Carving: Parallelizing a novel new image resizing algorithm," Project Report (Online)
ACM Trans. Graph. 28, 3 (2009), 23


**Index Terms**

Computer Science Image Processing

**Keywords**

Opsc - Optimized Piecewise Seam Carving Roi – Region Of Interest Saliency Map Shift Map