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

Optimized Image Resizing using Piecewise Seam Carving

- Michael Rubinstein, Shamir, Shai Avidan 2009. "Improved Seam Carving for Video Retargeting"; in ACM Trans. Graph. 27, 3
- Jacob Stultz, Prof Alan Edelman, "Seam Carving: Parallelizing a novel new image resizing algorithm"; Project Report (Online)
- Rubinstein M., Shamir A., Avidan S., "Multioperator media retargeting". 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