

Supplemental materials for Image Resizing

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1 Importance maps for examples in our paper



Figure 1: Importance maps for sample images in our paper.

2 Benefits to Use Edge Points on top of the grid points

See Figure 2

3 More Results and Comparisons

See following pages for more comparisons.

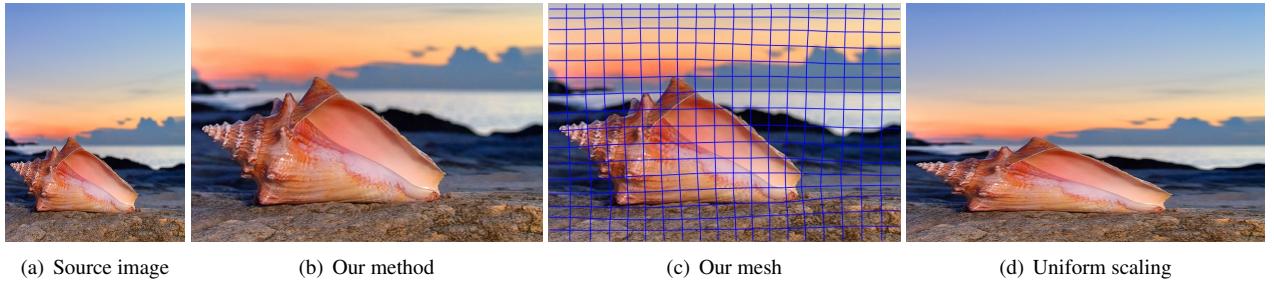
References

- [1] Ran Gal, Olga Sorkine, and Daniel Cohen-Or. Feature-aware texturing. In *Proceedings of Eurographics Symposium on Rendering*, pages 297–303, 2006.
- [2] Ariel Shamir and Shai Avidan. Seam carving for media retargeting. *Commun. ACM*, 52(1):77–85, 2009.



Figure 2: The three images in each row are input image, result mesh without edge similarity constraints (only grid points) and result mesh with edge similarity constraints (with edge points) respectively. The use of edge points on top of grid points can help to better preserve the global image features. The quads of the shapes are better (more like a square quad and more uniform scaling factors) than those only with grid points. The man is also better preserved than the one without edge points.

- [3] Yu-Shuen Wang, Chiew-Lan Tai, Olga Sorkine, and Tong-Yee Lee. Optimized scale-and-stretch for image resizing. *ACM Trans. Graph.*, 27(5), 2008.
- [4] L. Wolf, M. Guttmann, and D. Cohen Or. Non-homogeneous content-driven video-retargeting. In *ICCV*, pages 1–6, 2007.
- [5] Yi-Fei Zhang, Shi-Min Hu, and Ralph R. Martin. Shrinkability maps for content-aware video resizing. *Comput. Graph. Forum*, 27(7):1797–1804, 2008.



(a) Source image (b) Our method (c) Our mesh (d) Uniform scaling

Figure 3: Image enlarging for 'conch' image. As described in our paper, we can perform arbitrary image resizing in a unified framework. So there're no substantial difference between image enlarging and shrinking. Enlarging in x direction has similar results as shrinking in y direction, so we only demonstrate image enlarging for images with small width under the consideration of space.

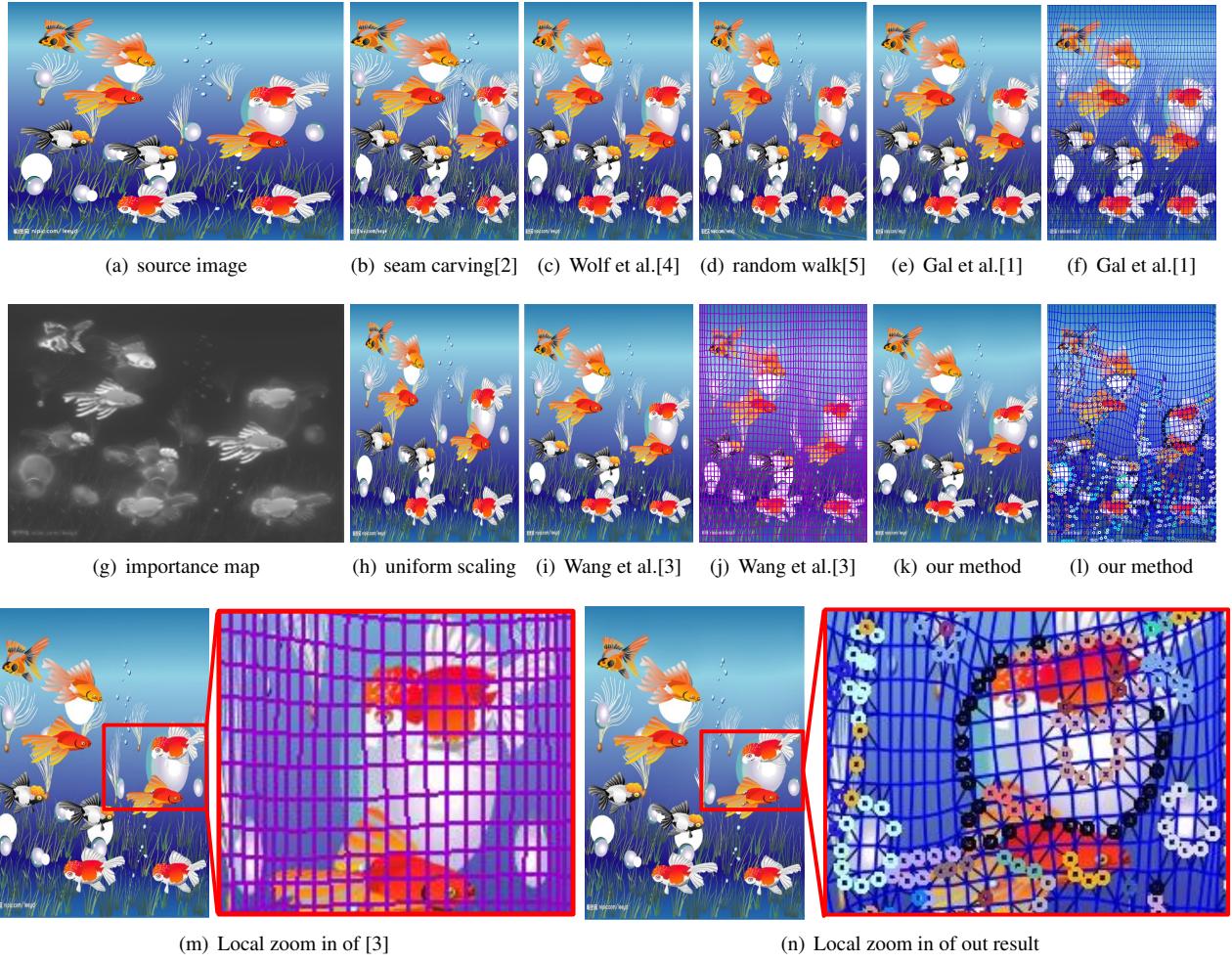


Figure 4: Comparison of different resizing methods.



Figure 5: Comparison of different resizing methods. Compared to [3], our method better preserves the head of the left lion.

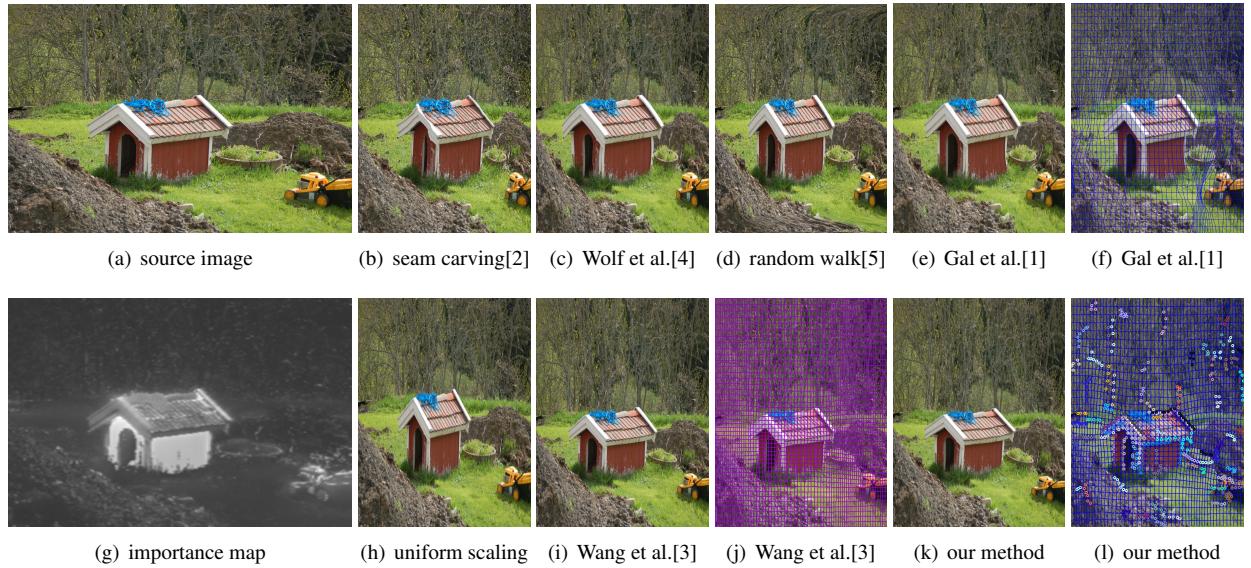


Figure 6: Comparison of different resizing methods. Compared to [3], our method better preserves the car on the right.

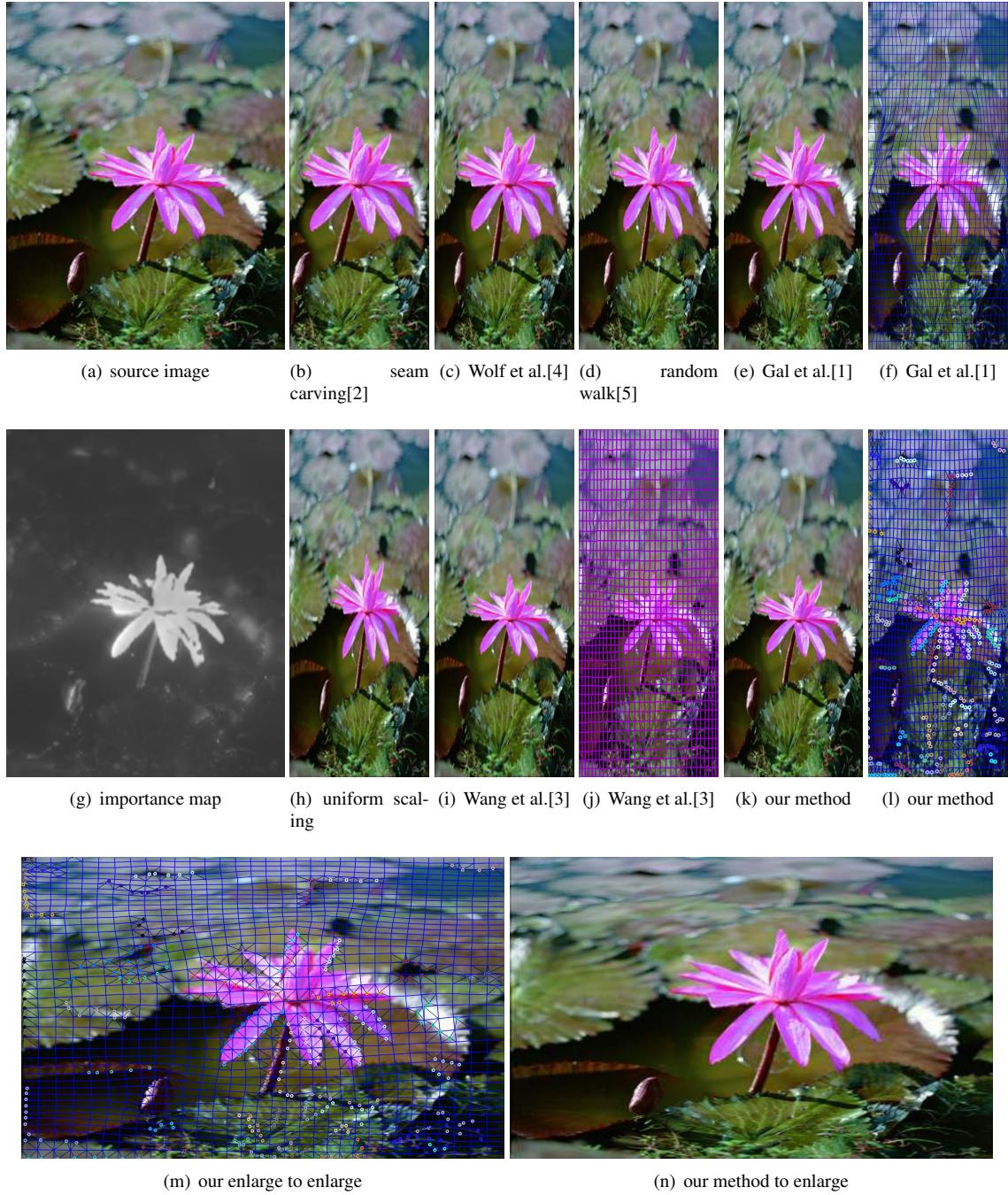


Figure 7: Comparison of different resizing methods.