


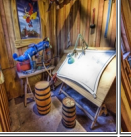

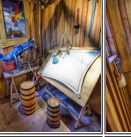





























































































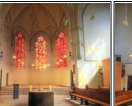




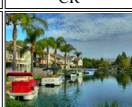

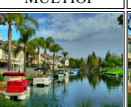
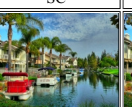
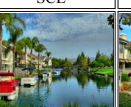

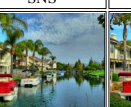

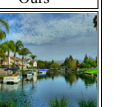



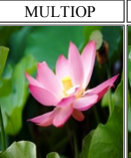

















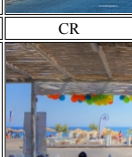



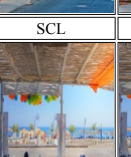

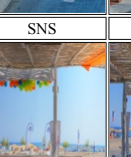
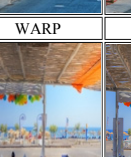






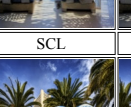



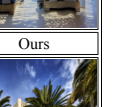
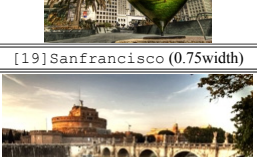








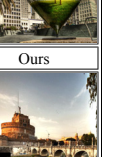





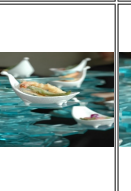




## Image Retargeting Results

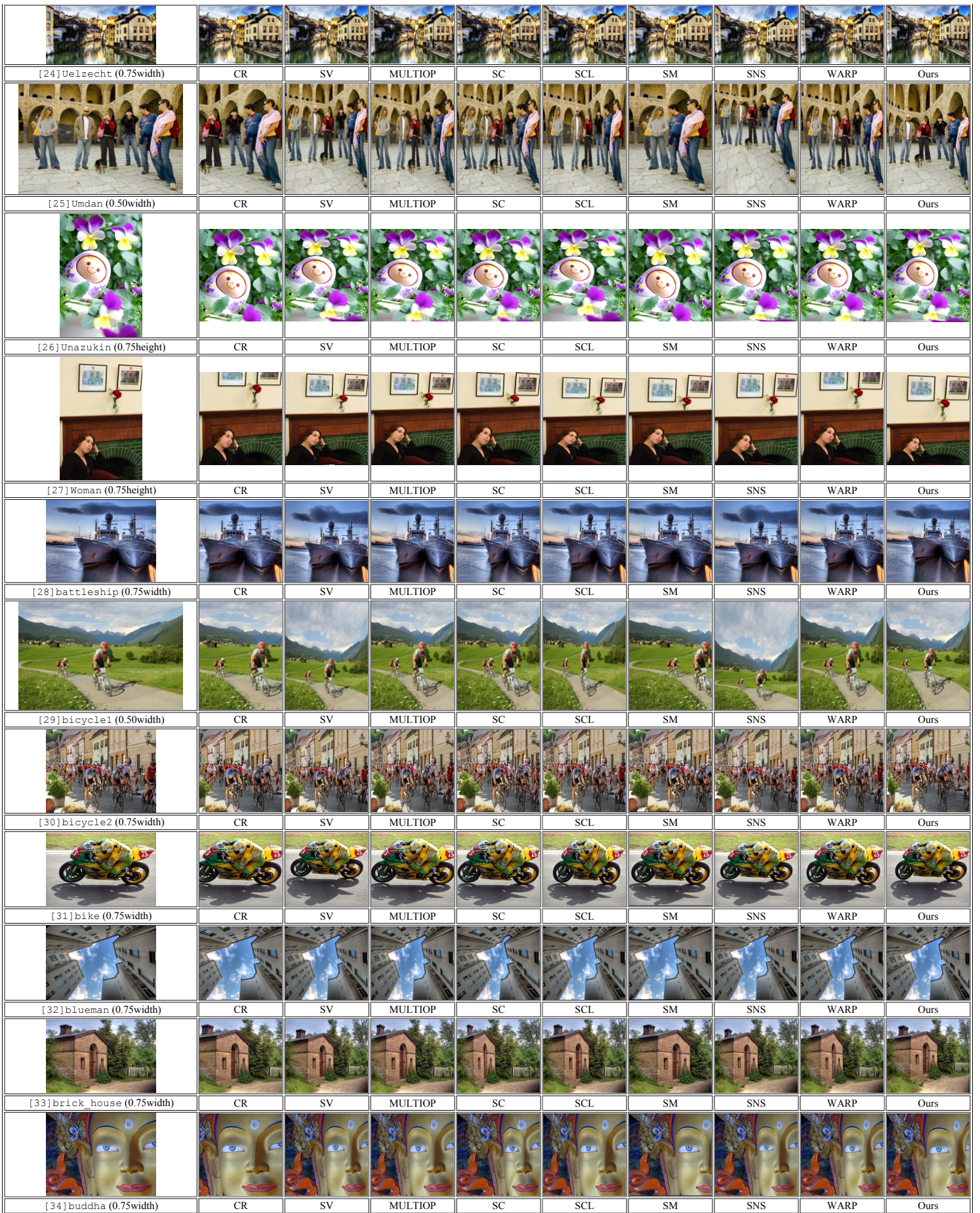
Note:





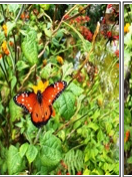



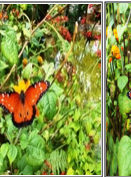


















































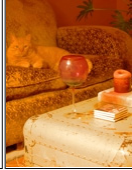














































- The original images and the results except ours are downloaded from the website that accompanies the paper "A Comparative Study of Image Retargeting", <http://people.csail.mit.edu/mrub/retargetme/dataset/dataset.html>.
- Retargeting operators are listed in the following table. For each image, N/A indicates that a result of the corresponding operator was not available for that image. This might happen for two reasons: (a) The method's authors did not send the result on that image, or (b) CR is inapplicable to image enlargement (although letterboxing can be used for this effect).

Cropping	CR	Manually choosing the best window of the target size from the original image
Streaming Video	SV	<i>A System for Retargeting of Streaming Video</i> - Krähenbühl et al. 2009 <a href="#">[paper]</a>
Multi-operator	MULTIOP	<i>Multi-operator Media Retargeting</i> - Rubinstein et al. 2009 <a href="#">[paper]</a> <a href="#">[website]</a>
Seam Carving	SC	<i>Improved Seam Carving for Video Retargeting</i> - Rubinstein et al. 2008 <a href="#">[paper]</a> <a href="#">[website]</a> <a href="#">[code]</a>
Scaling	SCL	non-uniform scaling with bi-cubic interpolation
Shift-maps	SM	<i>Shift-Map Image Editing</i> - Pritch et al. 2009 <a href="#">[paper]</a> <a href="#">[website]</a>
Scale-and-Stretch	SNS	<i>Optimized Scale-and-Stretch for Image Resizing</i> - Wang et al. 2008 <a href="#">[paper]</a> <a href="#">[website]</a>
Nonhomogeneous warping	WARP	<i>Non-homogeneous Content-driven Video-retargeting</i> . Wolf et al. 2007 <a href="#">[paper]</a> <a href="#">[website]</a>

Source	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
									
[1] ArtRoom (0.75width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
									
[2] BedRoom (0.75width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
									
[36] butterfly (0.50width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
									
[3] Brasserie_L_Aficion (0.50width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
									
[4] Canalhouse (0.50width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
									
[6] DKNYgirl (0.50width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
									
[8] Deck (0.50width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours

									
[10] Fatem (0.75width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
									
[11] Heavenly (0.75width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
									
[12] JapenesHouse (0.50width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
									
[13] Johanneskirche (0.75width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
									
[14] LakeVillage (0.75width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
									
[15] Lotus (0.50width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
									
[17] Marblehead Mass (0.50width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
									
[18] Perissa_Santorini (0.50width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
									
[19] Sanfrancisco (0.75width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
									
[20] SetAngle (0.50width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
									
[23] Tempura (0.50height)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours






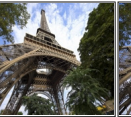
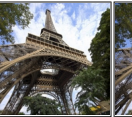

































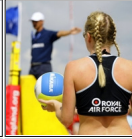





















































									
[35]butterfly2 (0.50width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
	N/A								
[37]butterfly (1.25width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
									
[38]car1 (0.75width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
									
[39]car2 (0.75width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
									
[40]car (0.75width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
	N/A								
[41]car (1.25width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
			N/A						
[42]cat (0.50width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
									
[43]child (0.75width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
							N/A		
[44]colosseum (0.50width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
									
[45]eagle (0.50width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
									
[46]face (0.75width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours

[47] family (0.50width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
[48] family (1.25width)	N/A	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
[49] fish (0.50width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
[50] fish (0.75width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
[51] fishing (0.50width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
[52] foliage (0.75height)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
[53] getty (0.75width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
[54] girls (0.75width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
[55] glasses (0.50width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
[56] greek_wine (0.50width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
[57] house (0.75height)	CR	SV	MULTIOP	SC	SCL	N/A	SNS	WARP	Ours

							N/A		
[58]housefence (0.50width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
	N/A								
[59]islands (1.25width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
[60]jon (0.50width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
[61]kids (0.75width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
[62]manga (0.75width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
[63]mnm (0.75width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
[64]mochizuki (0.75width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
	N/A								
[65]mochizuki (1.25width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
[66]money (0.75width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
[67]obama (0.75width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
[68]orchid (0.50width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
[69]osaka (0.75height)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
[70]painting1 (0.50width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours

[71]painting2 (0.75width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
[72]painting2 (1.25width)	N/A	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
[73]pencils (0.75width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
[74]penguins (0.75width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
[75]pigeons (0.50width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
[76]soccer (1.25width)	N/A	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
[77]stair (0.50height)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
[78]surfer (0.75width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
[79]surfer (1.25width)	N/A	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
[80]surfers (0.75width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
[81]tajmahal (0.50width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
[82]tiger (0.75width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours

									
[83] tower (0.75width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
									
[84] trees (0.75width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
							N/A		
[85] twobirds (0.50width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
									
[86] venice (0.75height)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
									
[87] volleyball (0.75width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
									
[88] waterfall (0.50width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
									
[89] wedding (0.75width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
						N/A	N/A		
[90] bells (0.75width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
						N/A	N/A		
[91] boat (0.50width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours
						N/A	N/A		
[92] ski (0.50width)	CR	SV	MULTIOP	SC	SCL	SM	SNS	WARP	Ours