

Problem Set 1, Part 5: Running the Seam Carving System

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Image 1, from the Problem Set 1 Given Images

- Left, "seals.jpg" (500 x 375), **Original**
- Center, "seals-dumb-resized.jpg" (200x375), **Regular Resize**
- Right, "seals-seamcarving-resized.jpg" (200x375), **Content Aware Resize**



Good Example: In this set of images, you can tell that the content aware resize yields a slightly better image by looking at the people standing on the jetty. (The guy with the black shirt looks awfully thin in the regular resize.)

Image 2, from the Problem Set 1 Given Images

- Left, "groceries.jpg" (500x375), **Original**
- Center, "groceries-dumb-resized.jpg" (200x375), **Regular Resize**
- Right, "groceries-seamcarving-resized.jpg" (200x375), **Content Aware Resize**



Bad Example: In this set of images, the content aware resize managed to screw it up pretty badly, since it avoided the shelves of items and deleted the floor, along with the edges along the end of the aisle.

Image 3, from the Problem Set 1 Given Images

- Left, "trees.jpg" (200x375), **Original**
- Center, "trees-dumb-resize.jpg" (200x375), **Regular Resize**
- Right, "trees-seamcarving-resize.jpg" (200x375), **Content Aware Resize**



Good Example: This image looks like it was cropped, but if you look closely at the trees, all of them are still there. They're just really skinny. If you didn't think too much about the structural integrity of super-thin trees, the seam carved image looks very natural.

Image 4, from the Wikipedia article on “China” (<http://en.wikipedia.org/wiki/File:Feather03.jpg>)

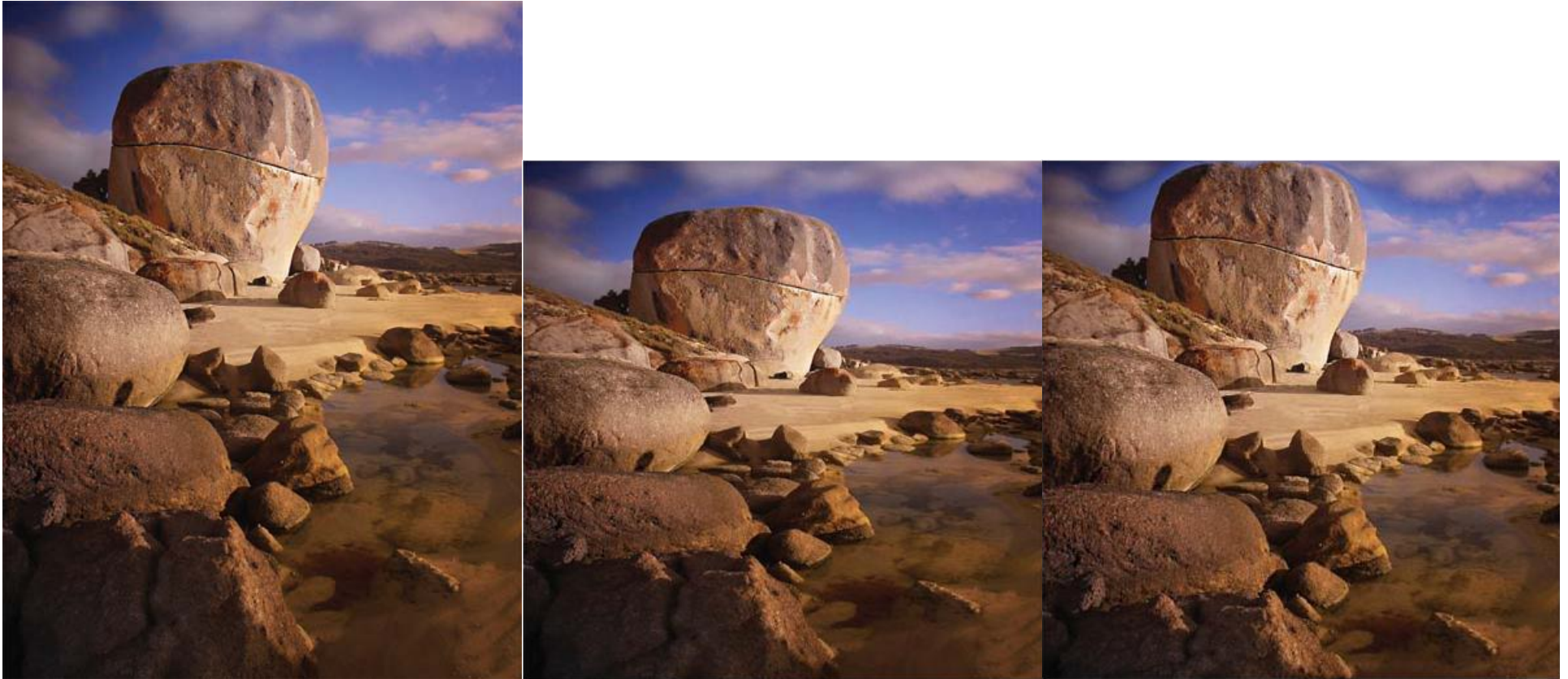
- Left, “chinese_opera.jpg” (768x600), **Original**
- Bottom Right, “chinese_opera-dumb-resize.jpg” (400x768), **Regular Resize**
- Top, Right, “chinese_opera-seamcarving-resize.jpg” (400x768), **Content Aware Resize**



Mixed Example: We can see the content resize targeting the curtain and the really long feathers. The results are halfway desirable – the actors and their costumes are left intact (instead of making everyone flatter), but the feathers are heavily mangled. Also, those feather hats make really cool swishy movements when you move your head. I tried to buy one last time I went to China, but I could never find them. I guess I wasn’t looking hard enough. They probably cost a lot, anyways.

Image 5, from <http://photo.blorge.com/2007/02/> by Mario Nicotera

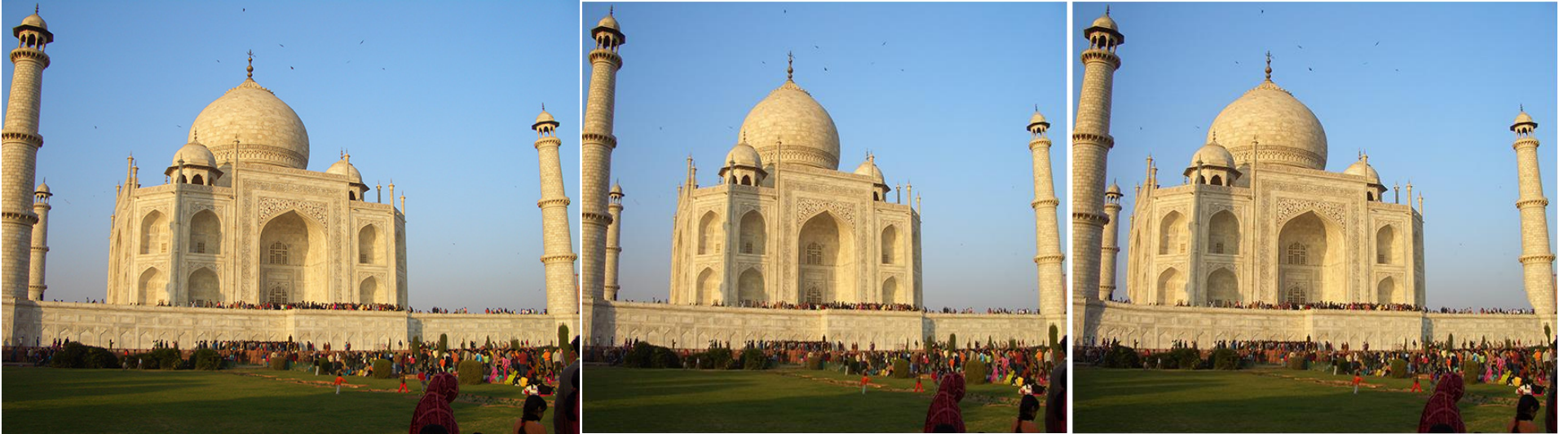
- Left, “desert-landscape.jpg” (400x523), **Original**
- Center, “desert-landscape-dumb-resize.jpg” (400x400), **Regular Resize**
- Right, “desert-landscape-seamcarving.jpg” (400x400), **Content Aware Resize**



Mixed Example: If you had never seen the original or seam carved image, the regular resize probably wouldn't seem resized at all. While the seam carved image works to preserve the rock features, it does crop out most of the sky, leaving behind some artifacts around the top of the rock. It also targeted the rocks and water at the bottom of the image.

Image 6, The Taj Mahal, picture taken by Michael Yao (me)

- Left, "taj_mahal.jpg" (640x480), **Original**
- Center, "taj_mahal-dumb-resize.jpg" (540x480), **Regular Resize**
- Right, "taj_mahal-seamcarving.jpg" (540x480), **Content Aware Resize**



Mixed Example: You might be wondering why the west guard tower is so close to the tomb compared to the east guard tower. It would have been better to crop out the sky on the right, but my implementation of seam carving was affected by the large mass of people in the bottom right. The cumulative energy image shows spikes in that area on the right, making it preferable to delete the left side.