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Besides images Prague and Mall, which were provided in the assignment, all of the pictures below belong to me.

Prague is 480x640 pixels. The assignment asked us to reduce the height by 100 pixels. I wanted to see how far I could take it and went for 300 pixels this time to yield 180x640 pixels.

Original

Matlab resized

Matlab resized: Boat and buildings flattened a bit as expected.

Seam carved: The program attacked the sky first, where the lowest gradient energy occurred. After having eaten away at enough sky, it went for the water instead along with some of the smoother areas of the boat (such as the top and the bottom of the boat), which is why the poor vessel is now sinking in the ridiculously wavy water (having clawed away at the smooth portions of the water, only ripples and waves remain). The desperate attempts of the seam carver to preserve the high energy, more "interesting" portions of the image results in a warped, surreal look. Notice the leaves and trees remain basically untouched, but this also results in a giant clump of monster trees (saved from being carved out due to the textures of leaves and the shadows) that appear to be growing out of the water.

Seam carved

Mall is 769x775 pixels. I reduced this one's width by 300 pixels to yield 769x475 pixels.

Original

Matlab resized: Trees get thinner!

Seam carved: Trees get thinner *and* merge into one!

Because the trunks are very consistent in their intensities, vertical seams were taken from the tree trunks and branches (the branches towards the top of the image, where more detail appears, were saved, however). After several carvings, the trunks and some of the branches become so whittled that the trees basically start to look like they merged together, resulting in the super-tree we now see here. The unsuspecting people in the picture however, fared much better than the trees. They were able to successfully retain their scaling under seam carving as opposed to generic resizing.

Matlab resized

Seam carved

Fat Chicken is 227x350 pixels. I want Fat Chicken to lose some weight, so I decided to reduce it's height by 80 pixels, resulting in a 147x350 pixel image.

Original

Matlab resized

Matlab resized: Fat chicken did lose some weight here.

Seam carved: But not nearly as much as it did here! The seam carving program had no mercy this time. The chicken's body has the lowest gradient energy in comparison with the background. The midsection is especially smooth and susceptible to being carved out. This results in a very unnatural look for our chicken, having had its midsection removed. Hilariously, the background remains practically unchanged.

Seam carved

Snow Kirby is 393x450 pixels and blends in very well with his surroundings. I was interested in how this would affect the seam carving process and decided to adjust both width and height this time. I reduced width by 200 pixels followed by height by 200 pixels yielding a 193x250 pixel image.

Original

Matlab resized: Because it was reduced by 200 pixels in both the vertical and horizontal directions, the generic resize did a good job with this, preserving scale.

Matlab resized

Seam carved: Unfortunately, the program had a tough time telling the difference between Snow Kirby and his background, resulting in his deformed body shown below. The shadows allowed his feet and eyes to be saved however. We end up with a deformed Kirby with a small head but comparatively huge limbs and eyes!

Seam carved

CPR Squirrel is 238x300 pixels. This one had its height reduced by 100 pixels to produce a 128x300 pixel image.

Original

Matlab resized

Matlab resized: Poor undeserving unconscious squirrel gets completely flattened under regular resizing.

Seam carved

Seam carved: In the seam carved version, we can see that we got our desired effect. The seams were taken from the grass and cement where the lowest energy is seen while generally leaving CPR Squirrel and his friend alone. A success!