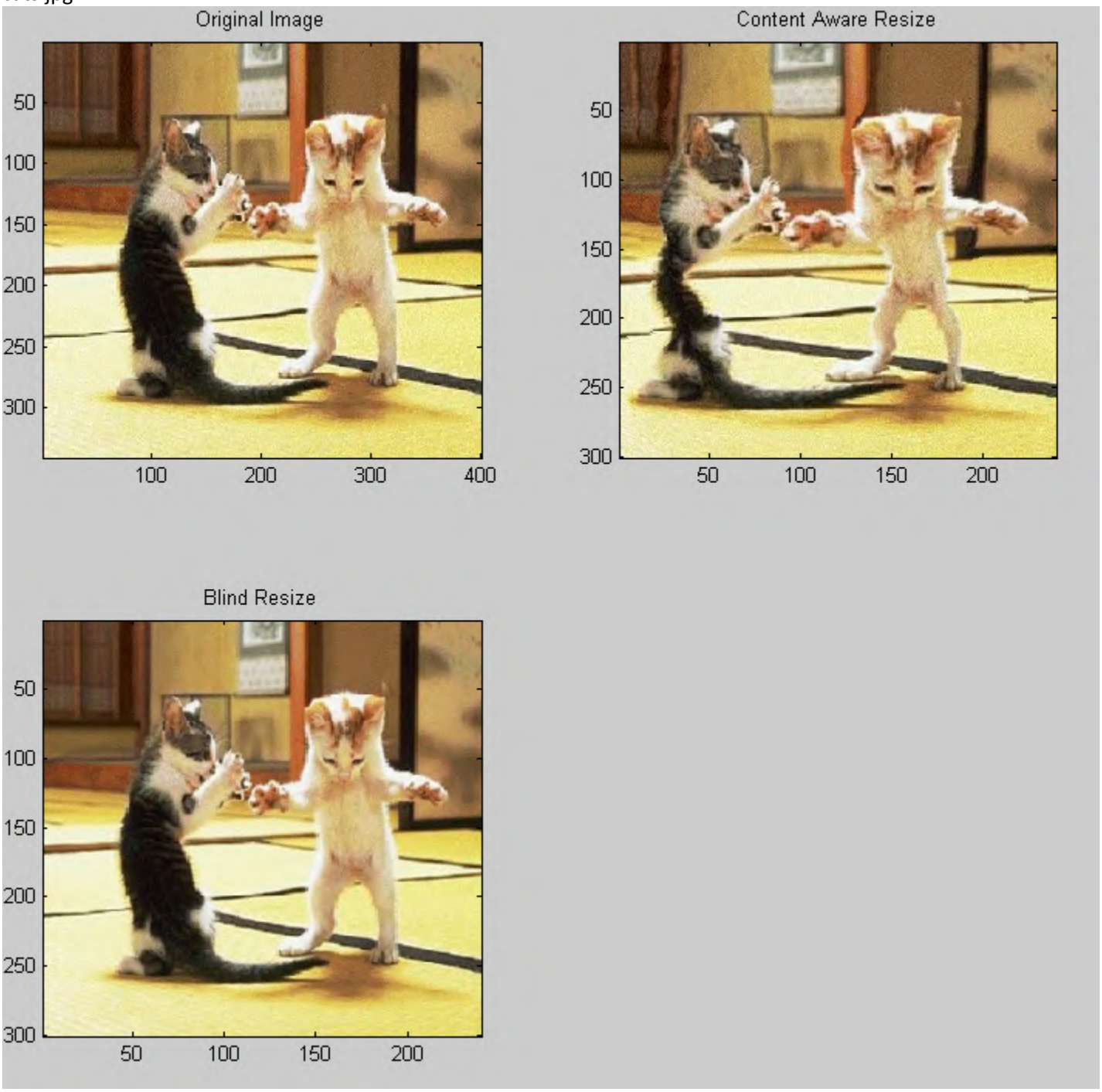
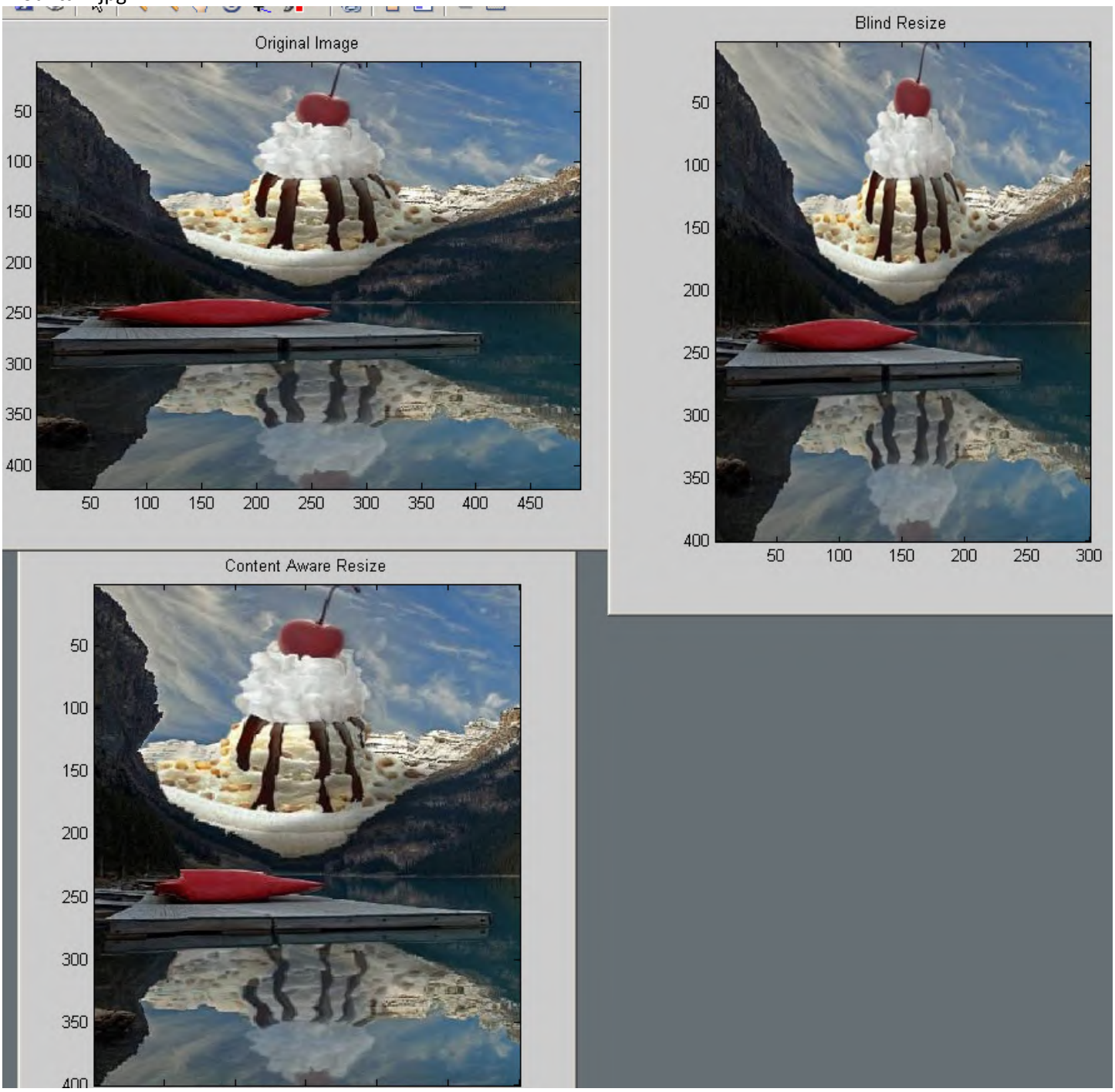
Ryu Peter Yu (rpy69)
Question 5
cats.jpg



Input dim: 400x340 Output dim: 300x240 Removal sequence: 100horizontal seams +100 vertical seams

F: We are seeing a failure of the algorithm here. As the cats are the path of minimum energy, the algorithm removes seams from the cats.

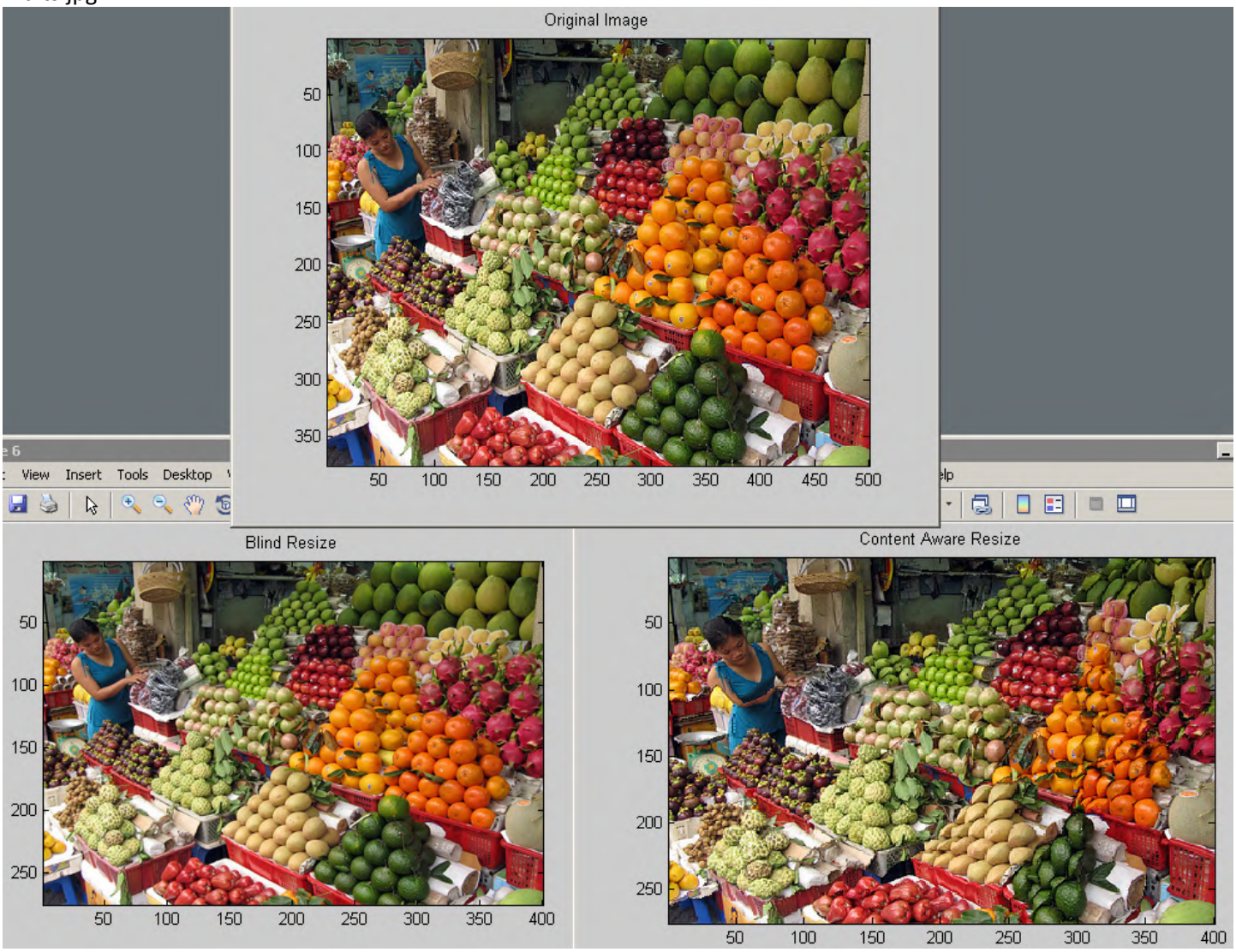
Mountain.jpg



Input dim: 494x423 Output dim: 400x300 Removal sequence: 94horizontal seams +123 vertical seams

F: The blind resize, while maintain full content, ‘squishes’ the image, narrowing all the dimensions. The content aware resize worked successfully here. The removed seams that were unimportant, while preserving the main content of the image in the original aspect ratio.

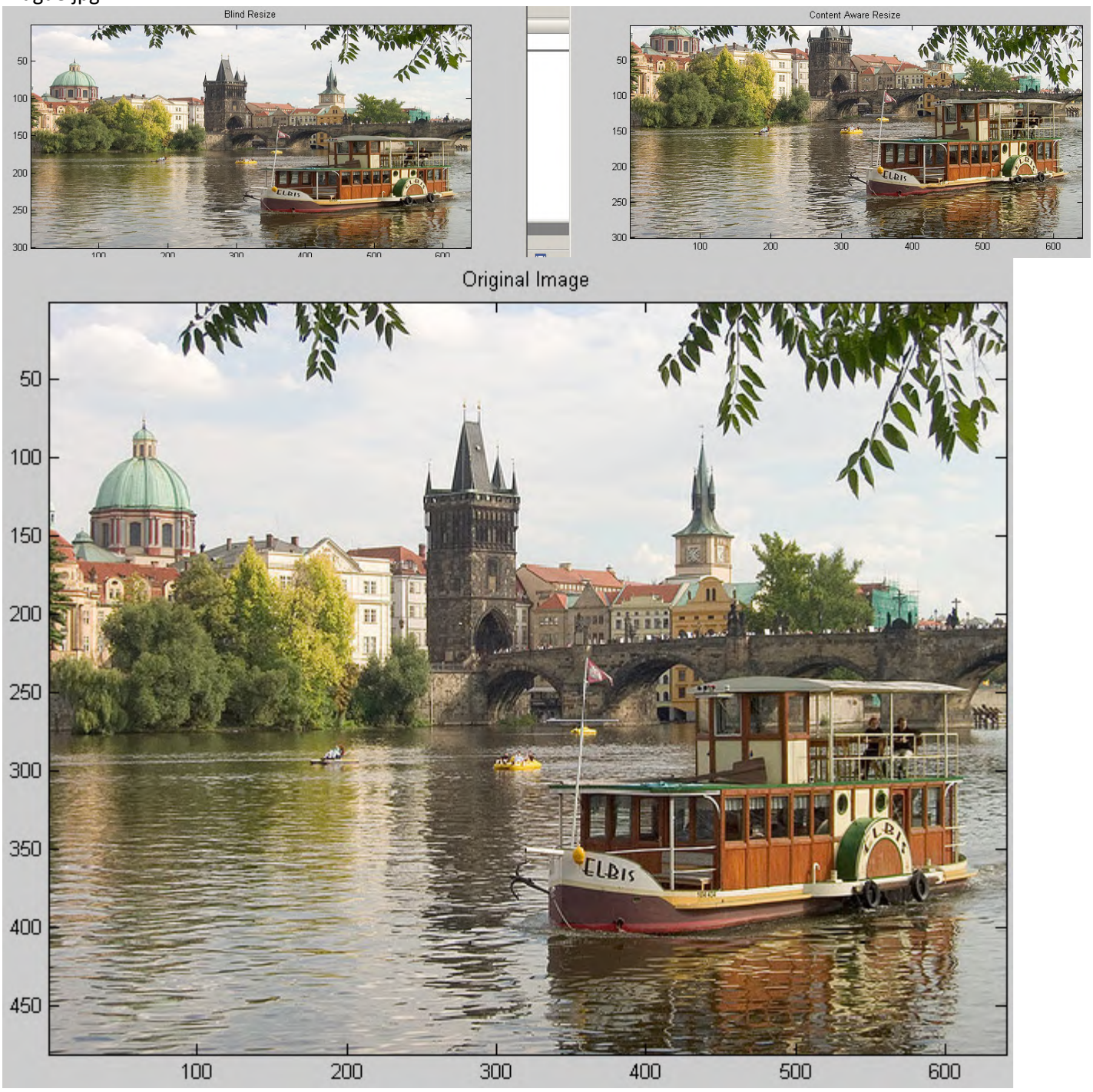
Fruits.jpg



Input dim: 375x500 Output dim: 275x400 Removal sequence: 100 seams both ways, alternating each seam

F: Another example of a failure. Clearly, the blind resize worked better here. Since the fruits on the right hand side share similar color, the content aware resize decided that they were relatively unimportant. Similarly, the strong gradient between the person's arm and the yellow fruit made the program decide to keep one and not the other. Unfortunately, it decided that the yellow fruit was more important than the person's arm, and as a result, removed the arm.

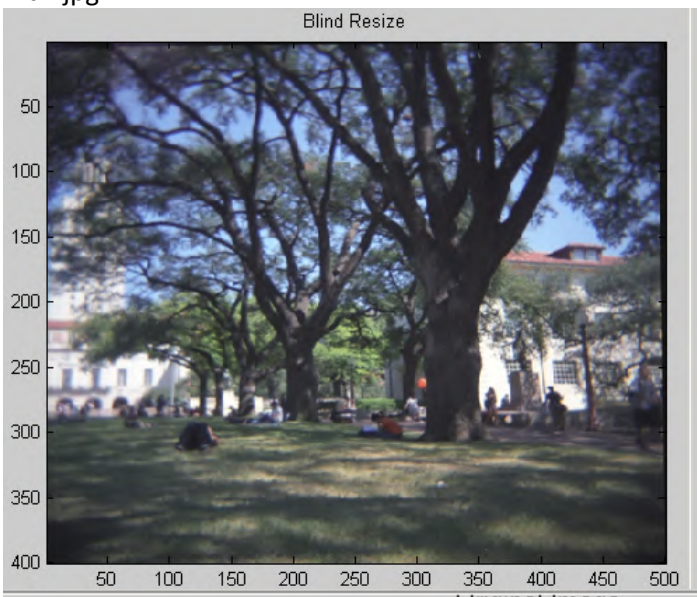
Prague.jpg

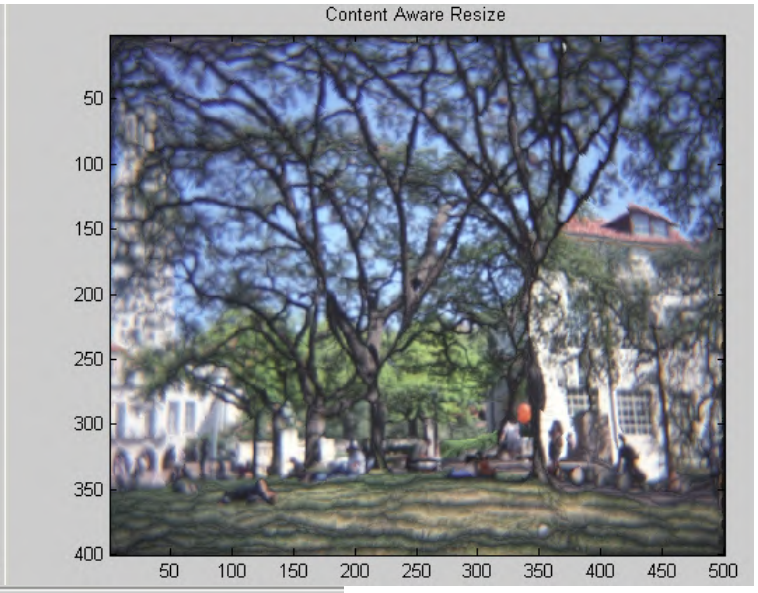


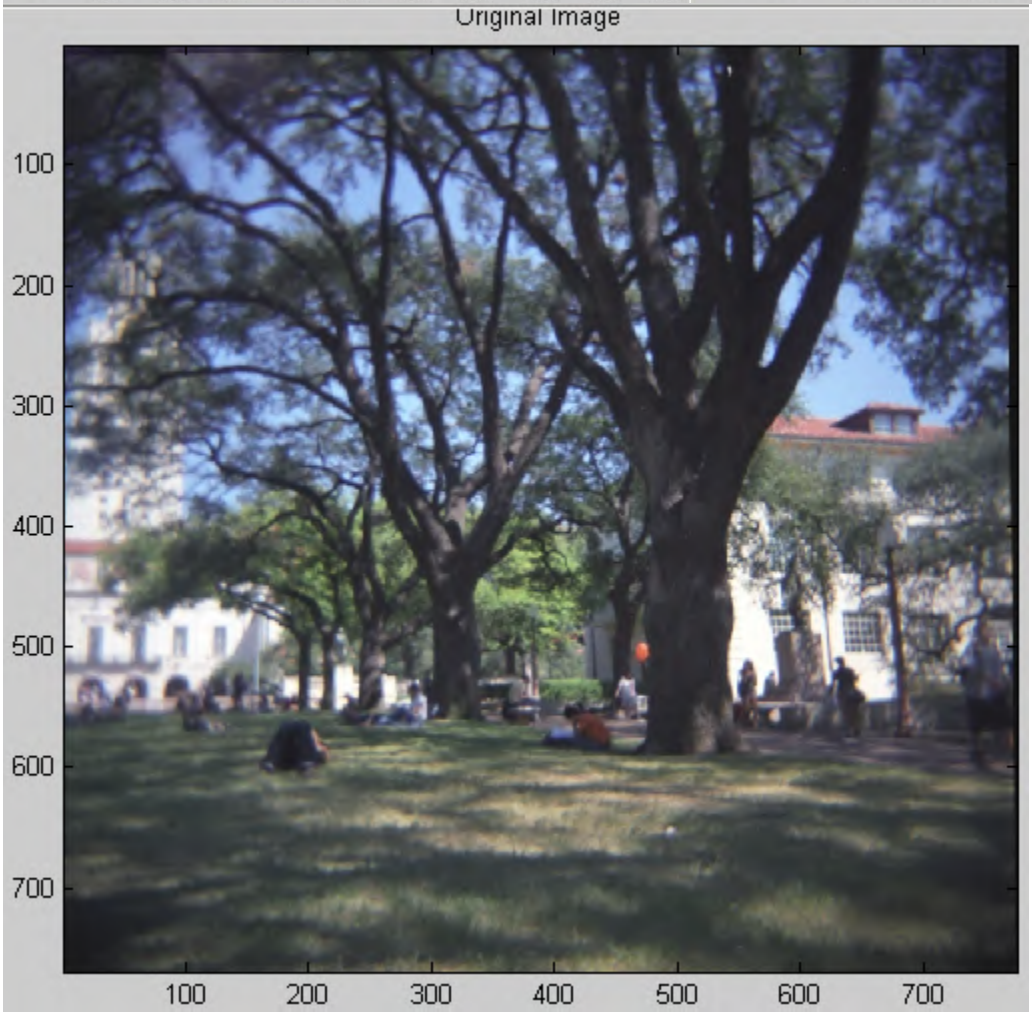
Input dim: 480x640 Output dim: 300x640 Removal sequence: 180 horizontal seams

F: Clearly a success. As is obvious from the images, the traditional resize definitely squished the image vertically in order to attempt to preserve all content. The content aware resize maintained (relatively) the aspect ratio of most of the content, such as the boat and the foreground leaves.

Mall.jpg







Input dim: 775x769 Output dim: 500x400 Removal sequence: 275 horizontal seams x 369 vertical seams

F: As is obvious from the images, the traditional resize shrunk everything, but maintained all the content. The content aware resize maintained the content size, but removed the trees to compensate for it.

Optional 4

Original:

Blind Resize

image from Japanese Master Utagawa Hiroshige

Content aware resize

It is clear from this image that blind resizing stretched the image out, giving the entire image a bit of a ‘fat’ feeling. By contrast, the content aware expansion maintained the aspect ratio of most parts of the image while still expanding it to the same dimensions as the blind resize.