**Identify one idea in the paper that you feel is a major contribution or a major limitation, explain it, and discuss why it is important**

The major contribution of this paper is the use and define energy functions that study the visual features, such as image gradients, to preserve the important content of an image. Classical methods of resizing or cropping images have limitations in the sense that they distort or cut important regions of an image. By applying higher energy around pixels containing faces and lower energy for background, we can define a function that preserves pixels of an image by removing the other pixels that do not have much contribution. Moreover, this method of resizing images can be done automatically with options for artistic interaction. It is a particularly important method because the intuitive nature of the algorithm and of its inputs achieves resizing results quickly while minimizing unwanted distortions in the important areas of an image. Most importantly, the intuitive nature of the algorithm allows it to be used by the casual user.

**Describe one idea of yours that builds on the paper and expand on that idea as much as possible**

The authors takes a particularly simple approach when performing image enlargement and content amplification as described in their paper. Given either a vertical or horizontal seam, a new line of pixels is added along the seam where each pixel is an average of its neighbours. Although this may work for small scaling factors, large enlargements of an image will produce noticeable artifacts where seams congregate around low energy areas and patches of pixels will have stretched features. Similar artifacts can be seen when reducing the size of an image by a large amount, where seams congregate around particular regions in an attempt to avoid important regions and sharp gradients can be observed from iteratively removing seams. That is, we are essentially culling out the local texture features of a scene. By either reducing or increasing the size of an image significantly, we find that certain regions will produce a high density of seams and thus produce visual artifacts in the resulting image. By tracking the density of seams in the area of an image, we can apply a post-process method for texture synthesis, such as graph cut textures, towards covering the affected regions with the original local texture features. This extension allows real-time previewing of images resized using seam carving, and should produce seamless or better results after the user has confirmed the new size parameters.