

# Assignment 2 Report

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The first pair(Source1, Mask1) represents a good case for inpainting. The background behind the removal object contains clouds, sea and rocks. Clearly, the background is not a constant-intensity region. The reason of this pair being considered as a good case is even though clouds are not uniform everywhere, they are all similar and repeated patterns appear in the image. The algorithm can easily find similar patches to fill. Same reason for the sea and rocks. Besides, the algorithm gives great to edges and the sea level and ground can be treated as edges. With the help of those edges, the object is removed even better.

On the contrary, the second pair(Source2, Mask2) represents a bad case because the background contains too many patterns that are almost only appeared once in the image. If there are too many edges behind the object and it will be hard for the algorithm to know how many edges behind the object and how should they look like unless those edges appeared more than once with exactly same size in the image. Therefore, when the image becomes really complex and have only few repeated patches around, the algorithm is likely to fail. The Source2 is such a complex image and the background behind the object contains many unrepeated patches so the algorithm failed reasonably.

The first pair contains no visible artifacts as it represents a good case. However, in the second pair, visible artifacts appear almost everywhere inside the newly filled object. The street lamp inside the object for example, is clearly a visible artifacts. The reason it appears may be there is some patches around the edges of the object have common parts with the street lamp and this lead the algorithm to draw an entire street lamp inside the object mistakenly.