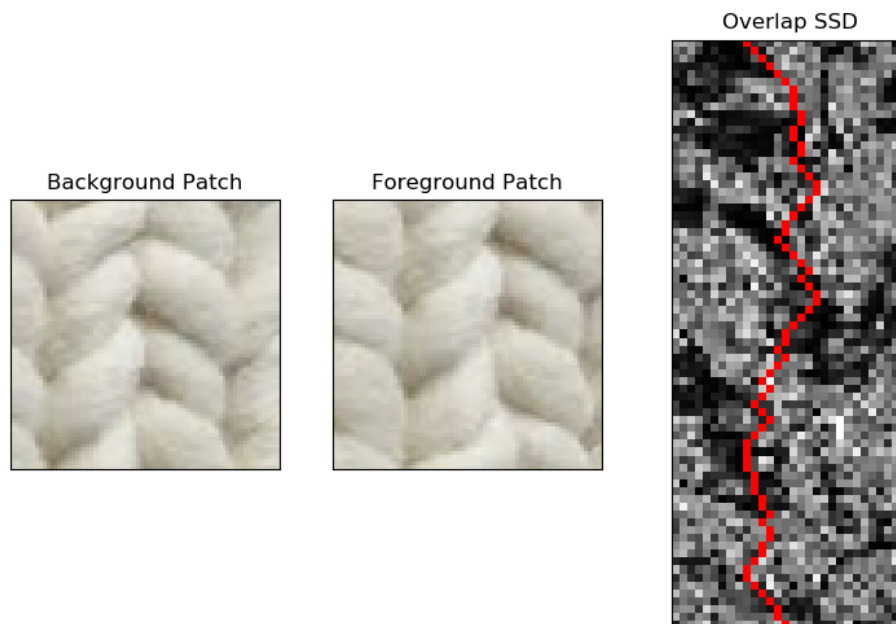


CS445 Project 2, Nathan Fitzpatrick

Comparing Random, Overlapping, and Seam-Finding Texture Methods



The following figure is an illustration of seam-finding. In this example, the right portion of the background patch is overlapped with the left portion of the foreground patch. The “Overlap SSD” image is the cost (square difference) of the overlapping regions. The red path represents the minimum cost to traverse the image from top to bottom.



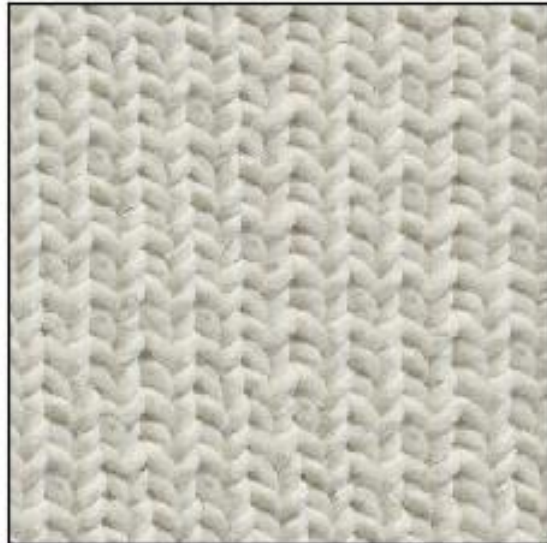
Texture synthesis is the process of using a sample texture image to replicate the general pattern over an arbitrary canvas. The process of quilting involves using overlapping portions of the synthesized image to search for matching patches in the source texture. Once a matching patch is found, the overlapping boundary can be further refined by using the cost image of the boundary to cut the overlaps together where the cost is minimized.

Four More Examples of Texture Synthesis

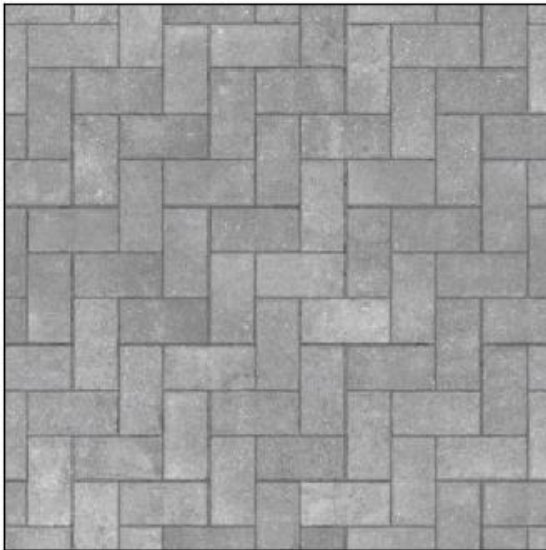
Original Texture



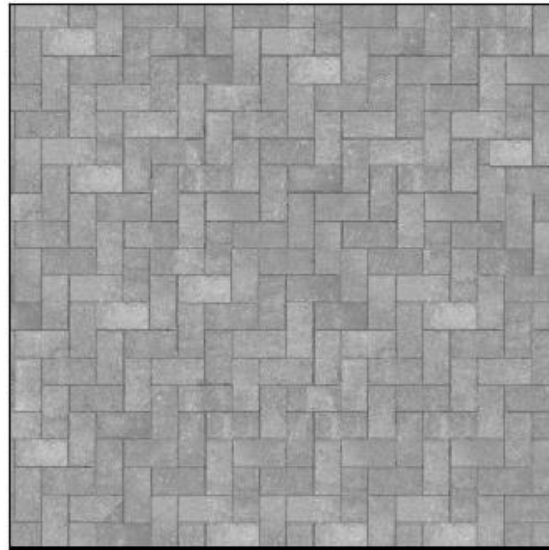
Cloth Synthesized



Original Texture



Pavement Synthesized



Original Texture



Desert Synthesized



Original Texture



Rain Synthesized



Texture Transfer

Texture transfer is the process of transferring textural patterns from a source texture image to a target image so that the synthesized image resembles the target image but is stylized like the texture image. It works by a process similar to the quilt cut method but instead of one cost function there are two: one for the overlap regions and one for the target image patch.

Source Texture



Target Image



Texture Transfer



Source Texture



Target Image



Texture Transfer



Bells and Whistles

The only bell and whistle I chose was the iterative texture transfer algorithm.

Non Iterative



Iterative



Points:

I believe I should receive all 100 points for the regular assignment and 15 points of bells and whistles.