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CS 445 - Project 2: Image Quilting

Complete the claimed points and sections below.

Total Points Claimed	**[97] / 175**

Core

1. Randomly Sampled Texture	[10] / 10
2. Overlapping Patches	[20] / 20
3. Seam Finding	[20] / 20
4. Additional Quilting Results	[10] / 10
5. Texture Transfer	[28] / 30
6. Quality of results / report	[9] / 10

B&W

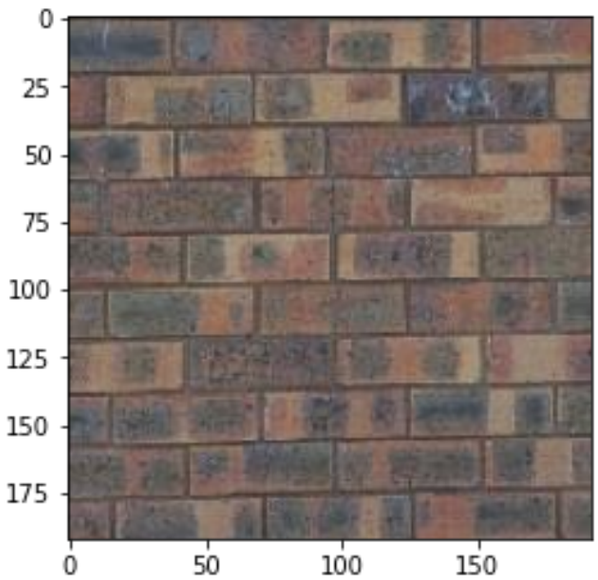
7. Iterative Texture Transfer	[0] / 15
8. Face-in-Toast Image	[0] / 20
9. Hole filling w/ priority function	[0] / 40

1. Randomly Sampled Texture

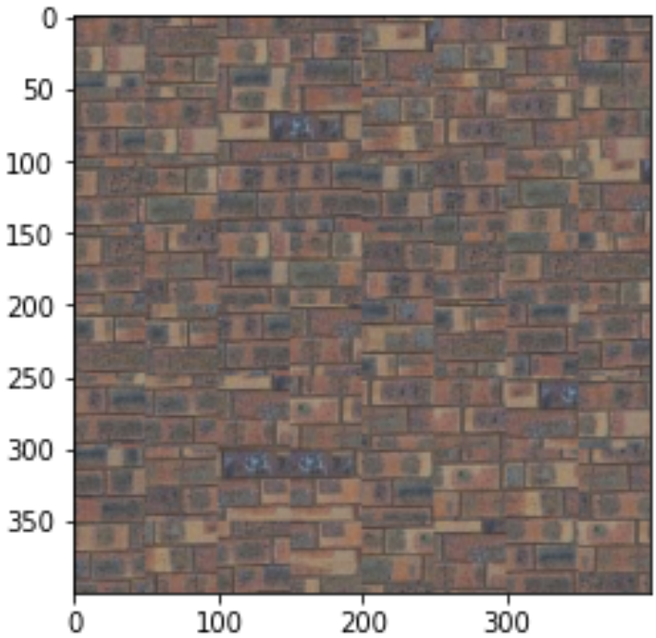
Parameters:

```
out_size = 400
patch_size = 50
```

Sample Image:



Output Image:

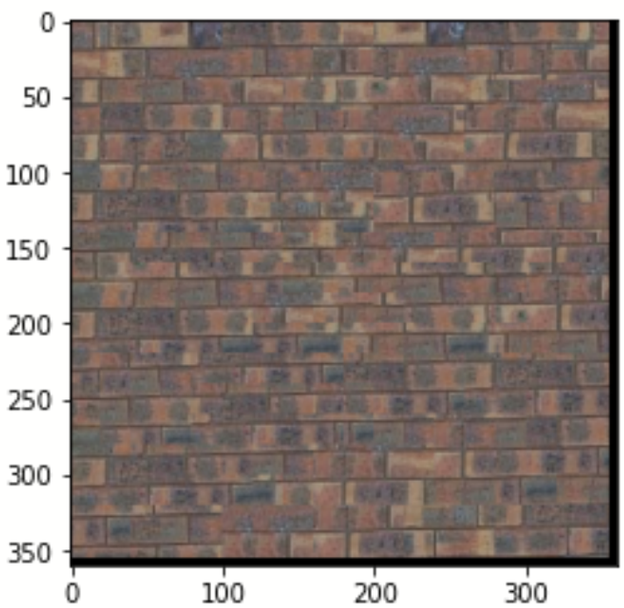


2. Overlapping Patches

Parameters:

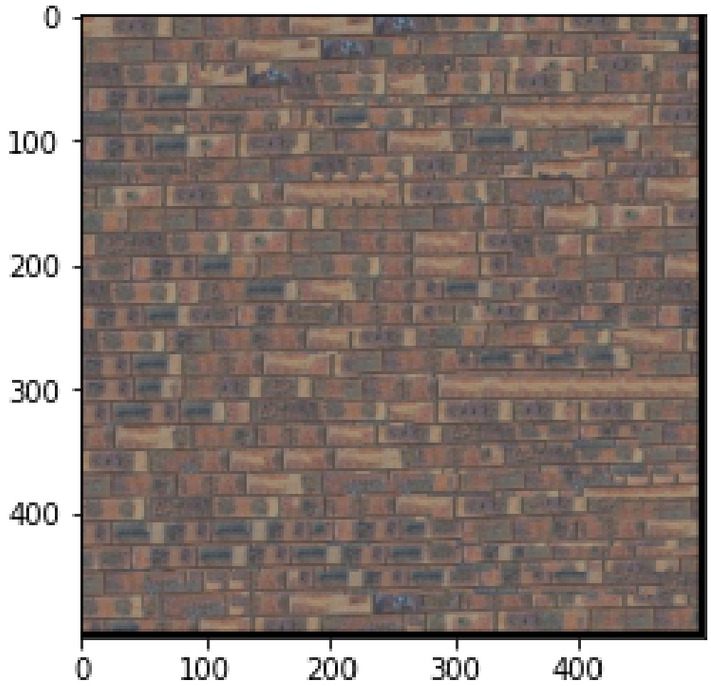
```
out_size = 360
patch_size = 35
overlap = 15
tol = 3
```

Output image for same sample as part 1:



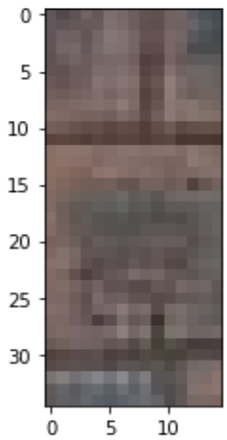
3. Seam Finding

Output image for same sample as part 1:

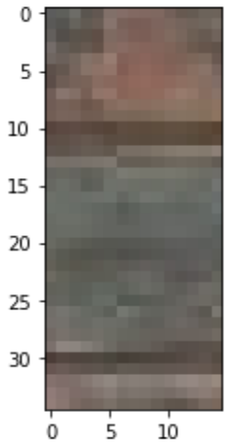


Two overlapping portions:

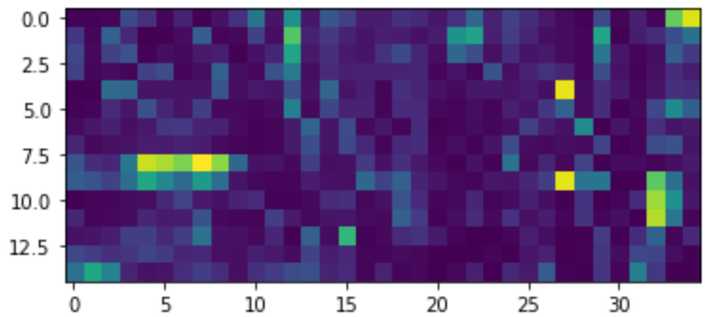
-Template:



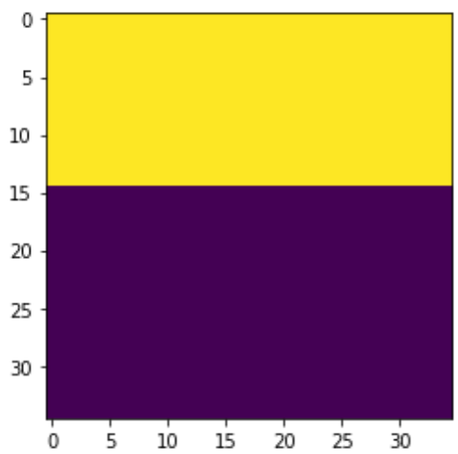
-Selected patch:



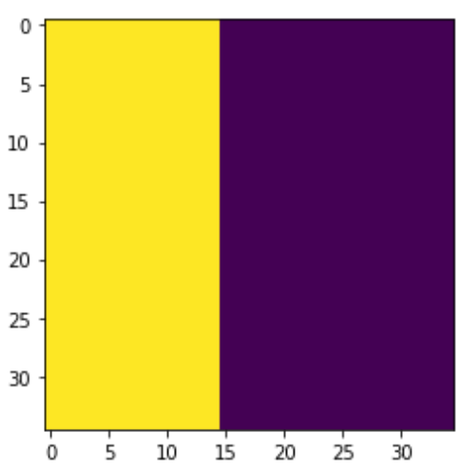
Pixelwise SSD:



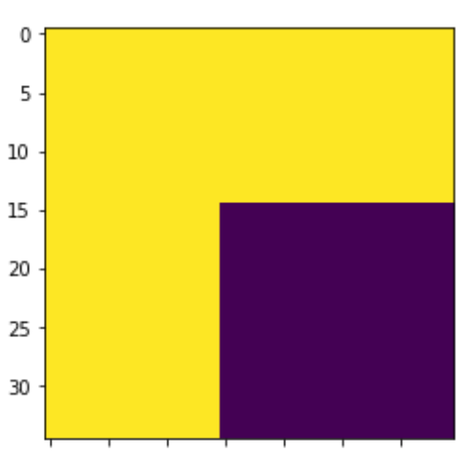
Horizontal Mask:



Vertical Mask:

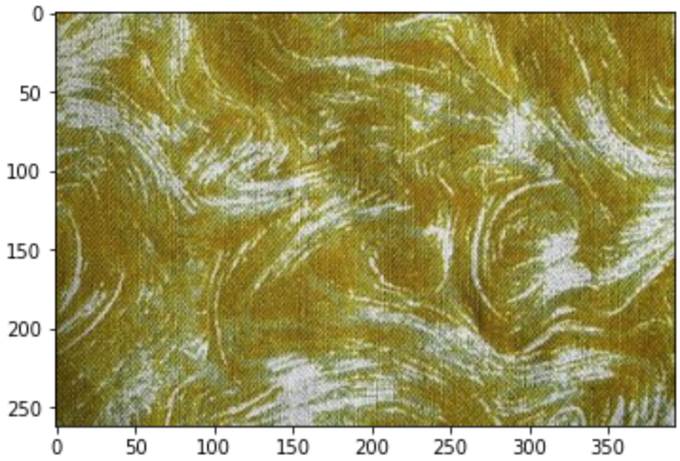


Combination Mask:

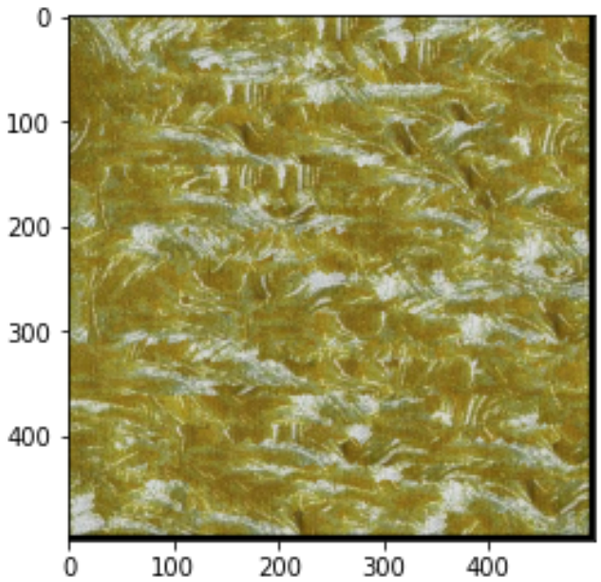


4. Additional Quilting Results

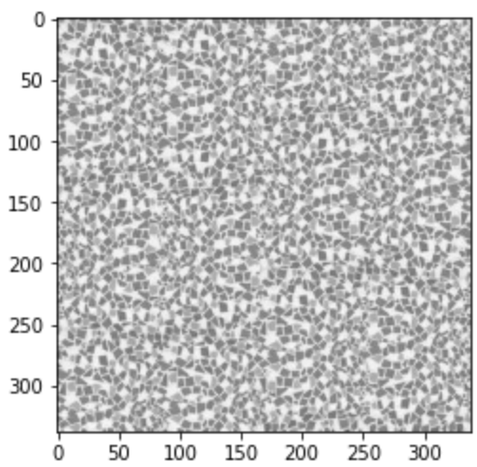
Sample Image:



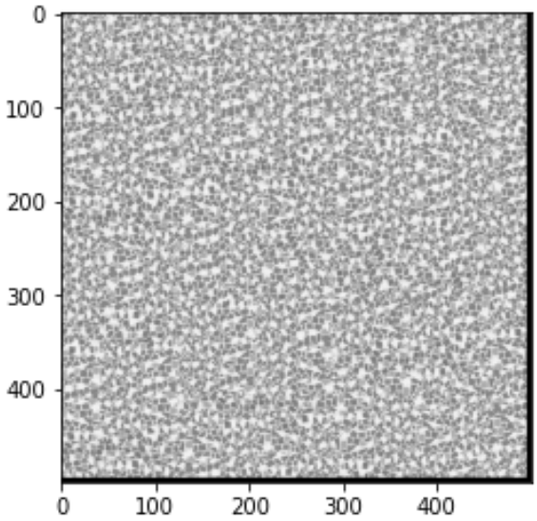
Output Image:



Sample Image:

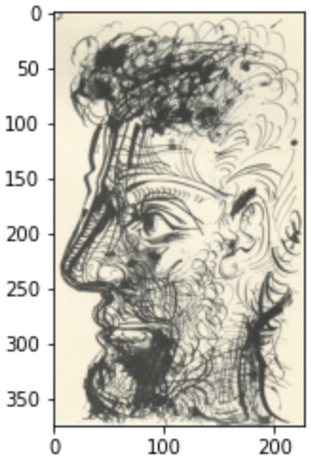


Output Image:

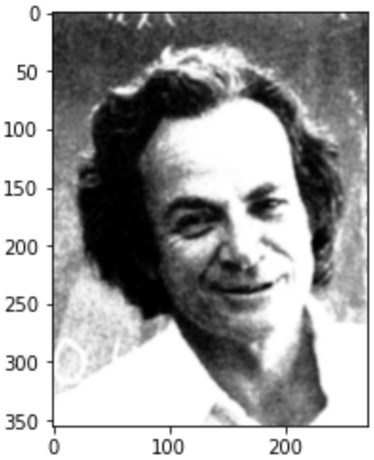


5. Texture Transfer

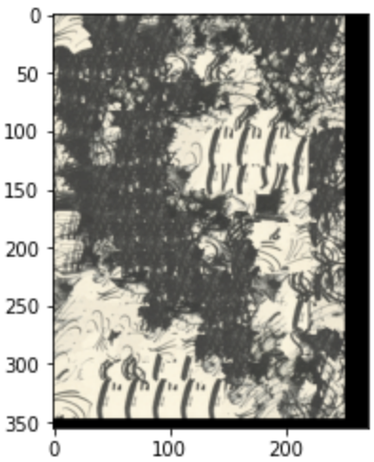
Input Texture:



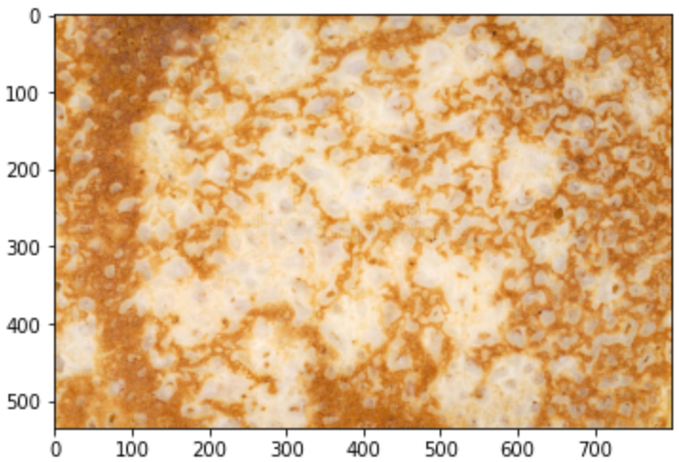
Guidance Image:



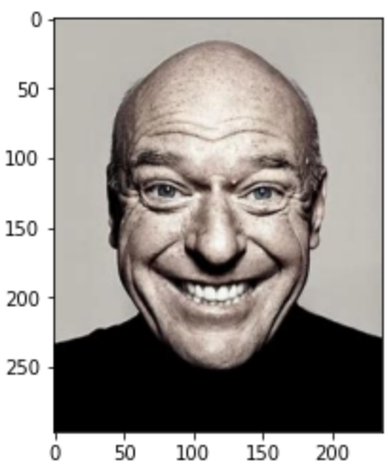
Output:



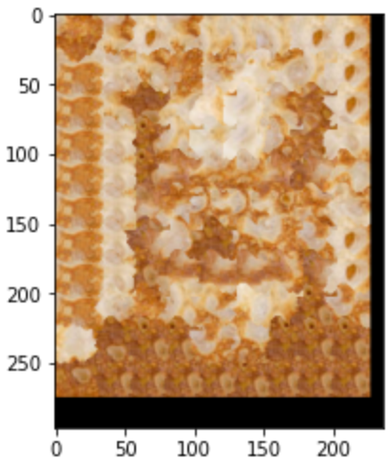
Input Texture:



Guidance Image:



Output:



Texture transfer works the same as quilt_cut, except it calculates ssd differently. Texture transfer takes in an alpha variable, which decides the weight of ssd_overlap (normal ssd calculated) and the ssd_guidance(ssd between the texture and guidance images) used in the calculation of the cost image. So in essence, we are trying to accomplish everything we have been earlier in the project (image quilting the texture image), while also pulling patches that will mimic the structure of the guidance image.This is accomplished through the alpha variable. It is worth noting that we still use seam carving to reduce the overlap between patches. As for the other parameters besides overlap, tol describes how many of the least cost patches we will be choosing from. Overlap tells us how much to place each patch over the adjacent patches in the output image, and patch size tells us how big of a patch to sample.

6. Quality of results / report

Nothing extra to include (scoring: 0=poor 5=average 10=great).

Acknowledgments / Attribution

Fabric Texture:
https://th.bing.com/th/id/R.44c163f81a69ba1ae0f2a48970cda007?rik=3j3oCoDSqV2zYA&riu=http%3a%2f%2fwww.photos-public-domain.com%2fwp-content%2fuploads%2f2011%2f04%2ffabric-texture-with-golden-swirl-pattern.jpg&ehk=fVjttfGGSpYCLb5svnXpQel%2f0tqcMAy4ShnfnCihAQU%3d&risl=1&pid=ImgRaw&r=0

Floor Texture:
https://img.freepik.com/free-photo/small-inlay-texture_1194-7189.jpg?size=338&ext=jpg

Smile Picture:
Dean Norris' Reaction | Know Your Meme

Pancake Texture:
https://thumbs.dreamstime.com/b/background-texture-pancake-29736393.jpg