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**CS 445 - Project 2: Image Quilting**

Complete the claimed points and sections below.

**Total Points Claimed [ ] / 175**

**Core**

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

**B&W**

1. Iterative Texture Transfer [ ] / 15
2. Face-in-Toast Image [ ] / 20
3. Hole filling w/ priority function [ ] / 40

**1. Randomly Sampled Texture**

A close-up of a brick wall

AI-generated content may be incorrect.A close-up of a wall

AI-generated content may be incorrect.

The images above were generated with a target output size of 200x200 and a patch size of 15. Random patches were taken from the texture (left) and used to assemble a new texture (right). The brick pattern has a lot of proportion data that matters at a more macro scale, which leads to the poor reproduction in the output image as edges do not line up meaningfully.

**2. Overlapping Patches**

A close-up of a brick wall

AI-generated content may be incorrect.

This image was generated with a patch size of 25, overlap of 11, and tolerance of 5. It preserves significantly more of the low frequency information from the input texture and, from a distance, appears to be a brick pattern. However, there are still misalignments and edges created by the overlapping process that make the result less suitable under close inspection.

**3. Seam Finding**

Include

* Output image for same sample as part 1
* Illustration: for a selected patch, display (a) the two overlapping portions; (b) pixelwise SSD cost; (c) horizontal mask; (d) vertical mask; (e) combination mask. The mask is binary and tells which pixels come from which patch.
  + Note: we’ll accept anything that looks like a genuine attempt to meet illustration instructions. (a) was intended to mean the two RGB patches (template and selected) that are being cut; (b) can be the SSD values of all the overlapping pixels (i.e. per-pixel SSD masked by template mask), or either one of the SSDs that you feed into cut.

**4. Additional Quilting Results**

Include

* At least two quilting results on your own images (excluding provided samples). Each result should show input texture image and output, and output should be more pixels than input.

**5. Texture Transfer**

Include

* Brief description of texture transfer method and parameters
* At least two texture transfer results (one result can use provided samples). Include the input texture and target images and the output (output should be same size as target image)

**6. Quality of results / report**

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

**7. Iterative Texture Transfer (B&W)**

Include

* Describe method
* Results on same images as shown for texture transfer.

**8. Face-in-Toast Image (B&W)**

Include

* Describe method
* Show input face image, toast image, and final result

**9. Hole filling w/ priority function (B&W)**

Include

* Describe method
* Show result on at least two images (show input with hole and output)

**Acknowledgments / Attribution**

List any sources for code or images from outside sources