Texture Synthesis: Image Quilting

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Progress

I've implemented the best-matching patch selection method to generate my output texture. Going through the output image in raster scan order, a patch is selected based on its SSD error of its overlap region with the previously selected patches overlap regions (which will only be the one or two patches above and/or to the left of it). I calculate the errors for every patch that can be generated from the sample image, find the minimum error among them, and randomly select from the set of patches that are within 10% of the best minimum error. This prevents generating the same texture for the same sample image when the program is run again.

User input includes the sample image, block size, and number of blocks. My program is written in Python3, using Pillow and Scikit Image libraries.

My next milestone for the project is to implement the algorithm to find the minimum error boundary cut, so the seams aren't as noticeable. Once that is completed, I plan to experiment with other algorithms to reduce the seams, such as poisson blending, and maybe try implementing texture transfer.

Images

Sample	Texture