

1. Why the Pair (Source1, Mask1) is a Good Case for Inpainting

The Source1 image is a wooden table with two remote controls on it, and Mask1 covers the area of the remote controls. This is a relatively simple texture with a uniform color and grain pattern, making it easier for the inpainting algorithm to replicate the surrounding pixels effectively. The lack of variability in the texture means that the algorithm can fill in the masked area without introducing noticeable artifacts. In the Source1.inpainted image, the inpainted area blends well with the surrounding wooden texture. The inpainting algorithm was able to create a smooth, seamless fill with minimal visible seams or texture inconsistencies. It ran for 132 iterations to get the inpainted output.

2. Why the Pair (Source2, Mask2) is a Bad Case for Inpainting

In the Source2 image, there is a complex scene with many shoes on a rack and a wooden floor. The mask Mask2 covers an area that covers many textures, including parts of the shoes and the floor. This level of complexity makes it difficult for the inpainting algorithm to figure out a collective texture, as it needs to handle many distinct textures and edges in the same masked area. The Source2.inpainted image shows visible artifacts where the inpainting algorithm struggled to fill in the masked area seamlessly. It ran for 42 iterations to get the inpainted output.

3. Visible Artifacts in the Results from the Two Datasets

- **Source1 Artifacts:** In the Source1.inpainted image, there are minimal artifacts. The inpainting algorithm successfully replicated the wooden texture with only minor imperfections.
- **Source2 Artifacts:** Source2.inpainted shows a visible artifact. The inpainting algorithm had difficulty filling the masked area due to the different textures and object edges in the mask. The output includes irregular patterns and misaligned textures where the shoes, floor, and wall intersect. These visible artifacts could be caused by the algorithm's inability to identify a coherent texture across multiple distinct surfaces. (Highlighted in the yellow box below).



Note:

When saving the output images for the report (input, Kanizsa, Source1, Source2) I took screenshots of the gui instead of using the “save” button as that feature did not work for me.