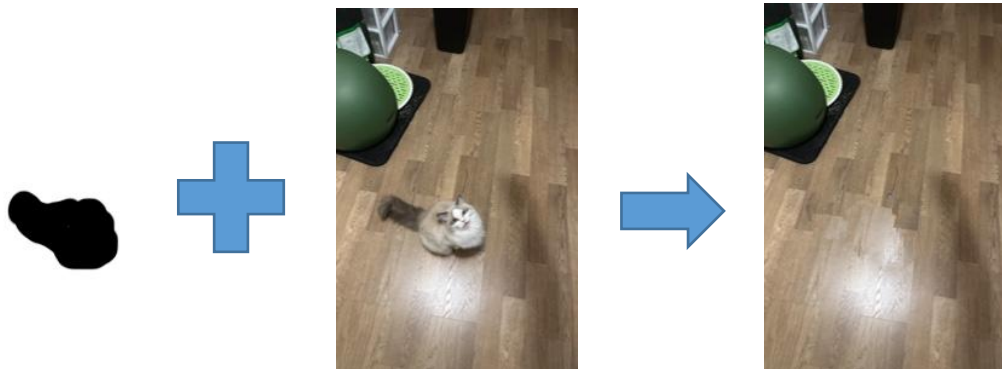


## Lab Report for A3

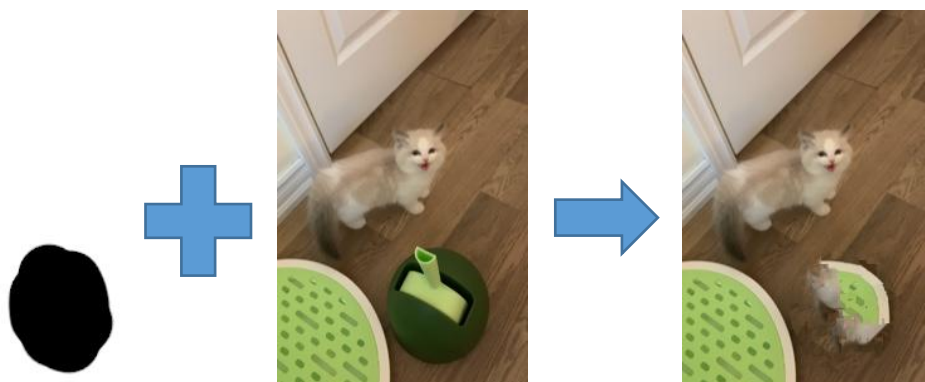
The source images come from my cat Yuki, source 2 was taken when she was a kitten, and source 1 was taken in recent days.

### - Source 1:



Source 1 makes a good inpaint with patch radius 2, because the inpainted picture looks very “real” after Yuki was removed from the picture, and the wood floor generated follows the pattern of the floor around it. What’s more, the filled pixels didn’t show clear artifacts and they sampled consistently to match the surrounding pixels.

### - Source 2:



Source 2 doesn’t inpaint very well with patch radius 5 and the pixels in cat litter spoon’s place were filled by “unnatural” pixels from the plate instead of from the wood floor. Those pixels are also not filled smoothly as source 1, and artifacts are very obvious.

### - Discussion:

Even tough Source 1 is a “good” example, it still has artifacts on the rectangular pattern of the floor. For example, in the center of the picture, the filled region didn’t strictly follow

the pattern of rectangle that the straight edge from the floor is not so straight after being filled. I think that artifact is due to the fact that light was reflected and it covers some information of the floor. Also, each wood floor chunk has its own treads that will also contribute to the priority computation which will then cause the artifacts.

As for source 2, I think the main reason why it produces bad image is that the spoon was very close to the plate and the the priority will fall on the green plate, and then the patch from plate will contribute to the bad pixels on the filled area. Another reason I suspect is that the green plate has a pattern with more “different” densities that will also affect the quality of the filled area when the patch region fall onto the plate.

As followed up experiment, I find that very large radius, e.g. patch radius as 20, will



product much better image, like: , and I guess that larger patch radius will lead to the wood floor region with higher priorities to fill the front. Then we can see that the floor color and pattern takes over the litter spoon instead of green plate.