RMSE VALUES

In order to use built-in rmse() function of matlab, I converted each image into double type. During this conversion, values of each slot squezed inside 0 and 1. For this reason, my rmse values are quite small, mostly between 0 and 0.15. However, this doesn't affect the relative values(i.e ratios of rmse values) and shape of the plot is not affected. I didn't want to mess up with the built-in function, therefore I left it like that. Absolute values can be derived by applying normalization. However, I believe that current version is ok.

EXPLANATION OF THE VALUES

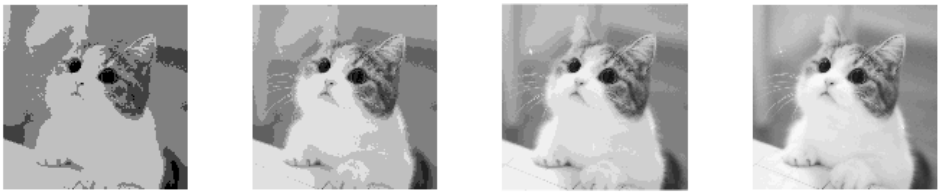
As n increases, rmse values of Original vs Transmitted increase. This is logical, because as we store more bits for recovery, we lose the precision in the transmitted image.

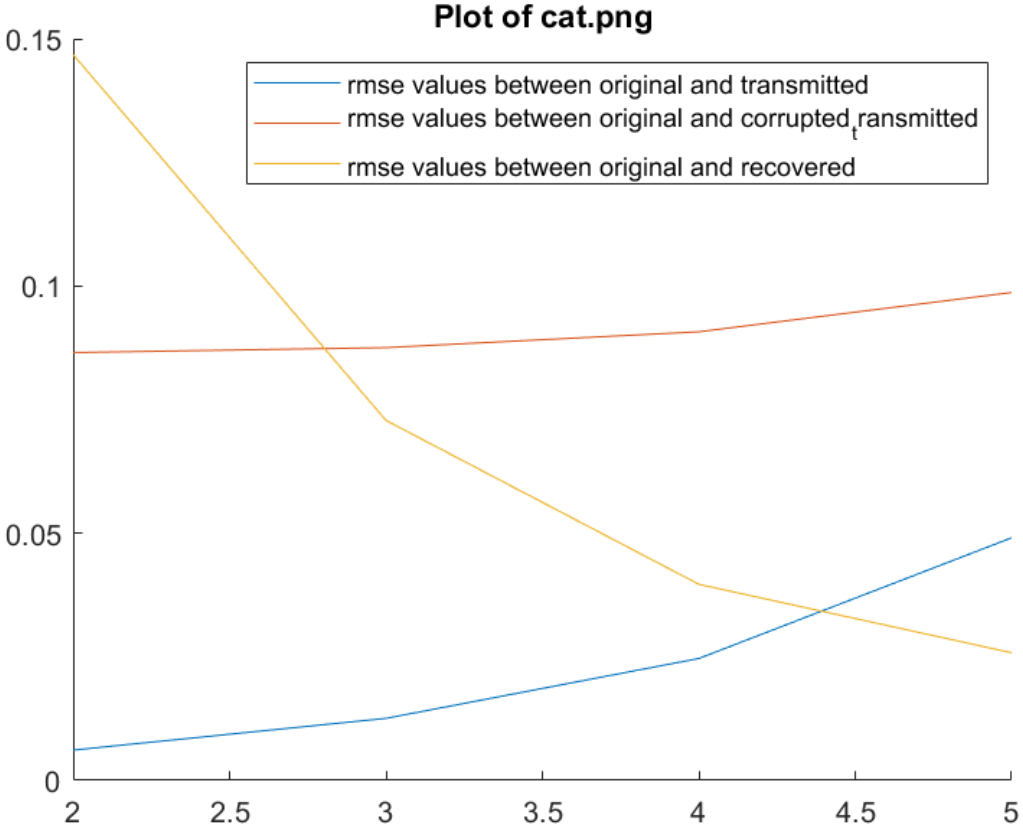
As n increases rmse values of Original vs Recovered decrease. This is logical, because we store more information for recovery, and recovered images have higher resolution and more similar to the original one.

As n increases, rmse values of Original and Corrupted images generally increase slightly. I guess this is due to the less accuracy of the pixels which are not corrupted.

RECOVERED IMAGES

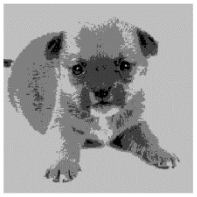
I put the all images for each n value(2,3,4,5 increasing from left to right) into the same file. This way, it is easier to read and compare the differences. If you want each figure to include one image, you can call figure and showim() functions at the end of each loop(for each value of n). However, I print all of them in one shot when for loop is terminated into one figure.

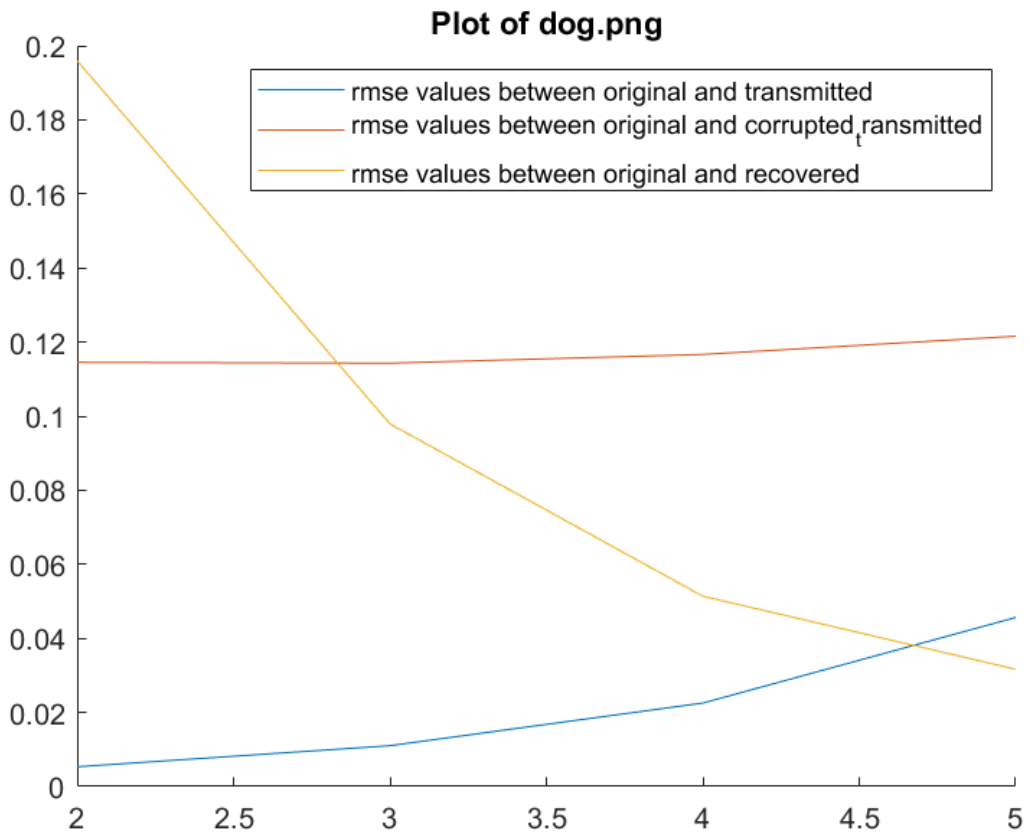



Plot of cat.png
rmse values between original and transmitted
rmse values between original and corrupted_transmitted
rmse values between original and recovered
0.15
0.1
0.05
0
2
2.5
3
3.5
4
4.5
5

cat.png

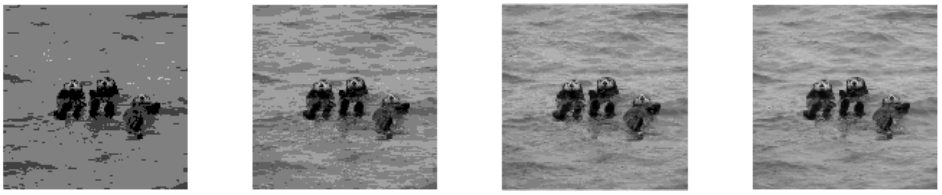
RMSE Values	n = 2	n = 3	n = 4	n = 5
Original vs Transmitted	0.0061	0.0126	0.0247	0.0491
Original vs Corrupted	0.0865	0.0875	0.0907	0.0987
Original vs Recovered	0.1468	0.0728	0.0397	0.0258

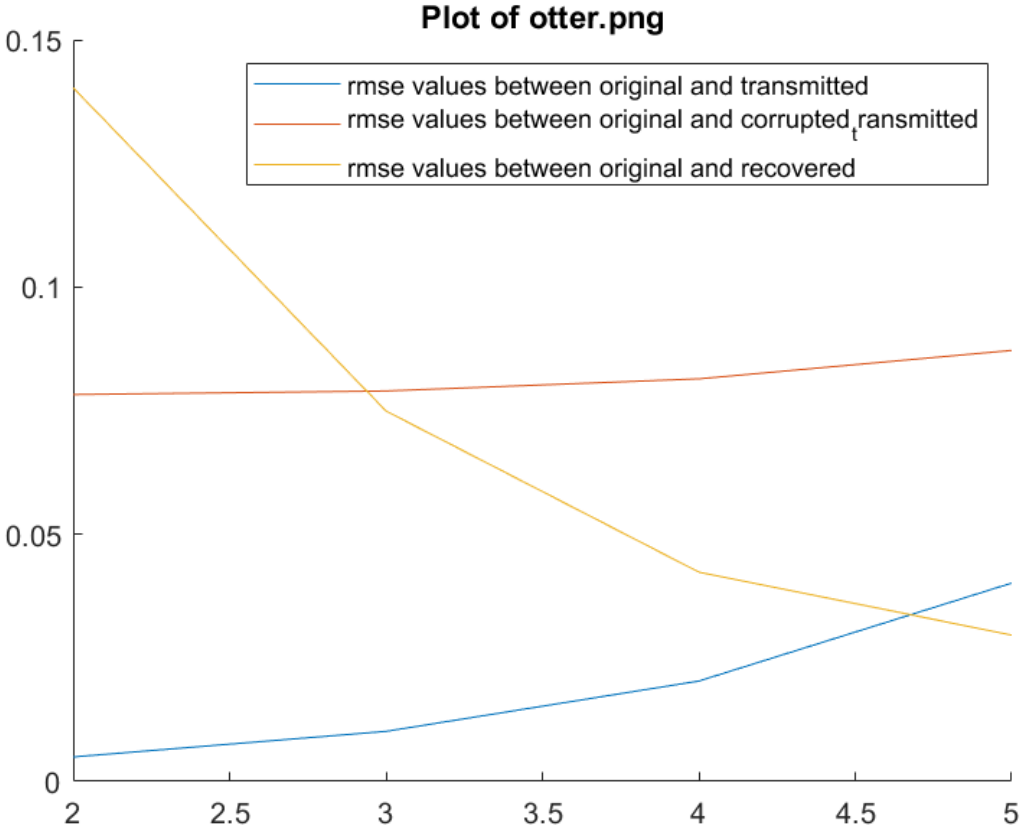


dog.png

RMSE Values	n = 2	n = 3	n = 4	n = 5
Original vs Transmitted	0.0053	0.0110	0.0225	0.0456
Original vs Corrupted	0.1145	0.1143	0.1167	0.1216
Original vs Recovered	0.1959	0.0979	0.0514	0.0317




Plot of otter.png
rmse values between original and transmitted
rmse values between original and corrupted_transmitted
rmse values between original and recovered
0.15
0.1
0.05
0
2
2.5
3
3.5
4
4.5
5

otter.png

RMSE Values	n = 2	n = 3	n = 4	n = 5
Original vs Transmitted	0.0050	0.0101	0.0203	0.0401
Original vs Corrupted	0.0783	0.0790	0.0814	0.0872
Original vs Recovered	0.1403	0.0749	0.0423	0.0296