

Fast and Robust Earth Mover's Distances Additional Results - Image Retrieval Examples

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This document contains additional image retrieval results for the paper - “Fast and Robust Earth Mover’s Distances” [1]. The results are for image retrieval as described in the paper. Each figure contain a query image on the left and nearest neighbors images which are ordered from left to right by their distance from the query image. Top row is for the best distance - \widehat{EMD} with thresholded ground distances. Bottom row is for the second best distance - L_1 like distance. By allowing small deformations in the \widehat{EMD} we obtain results that are visually similar to the query image. It is noteworthy that in some cases the returned images are not from the same class, but are still visually similar. For example, Fig. 2.

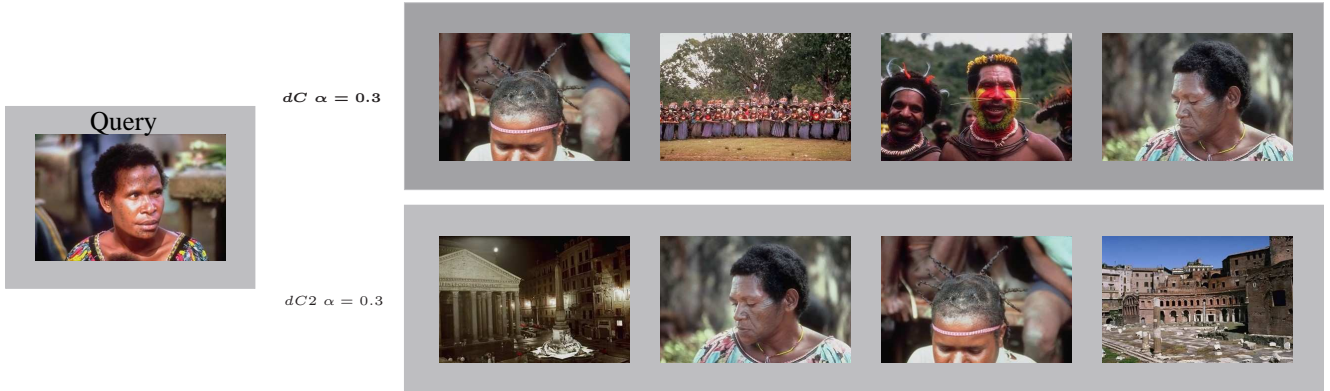


Figure 1.

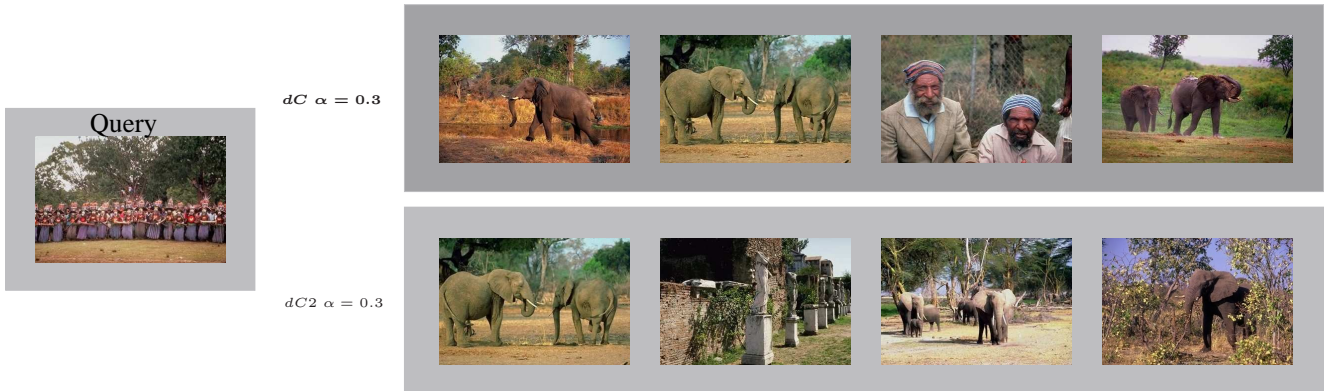


Figure 2.

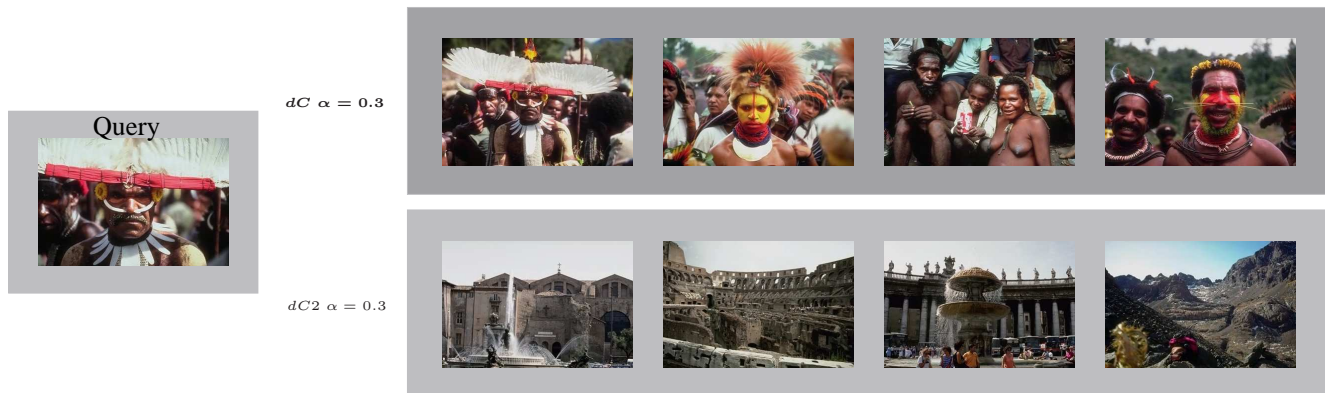


Figure 3.



Figure 4.

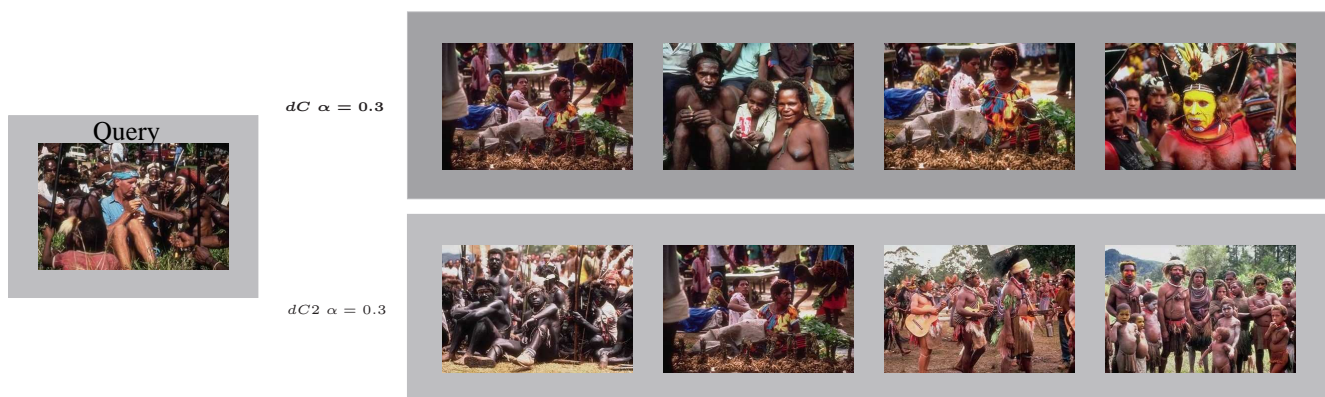


Figure 5.

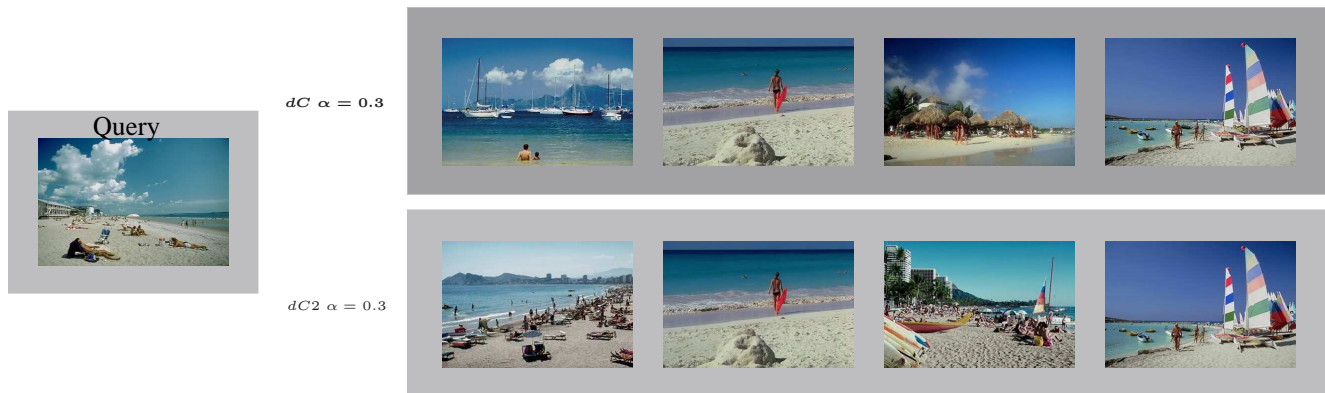


Figure 6.

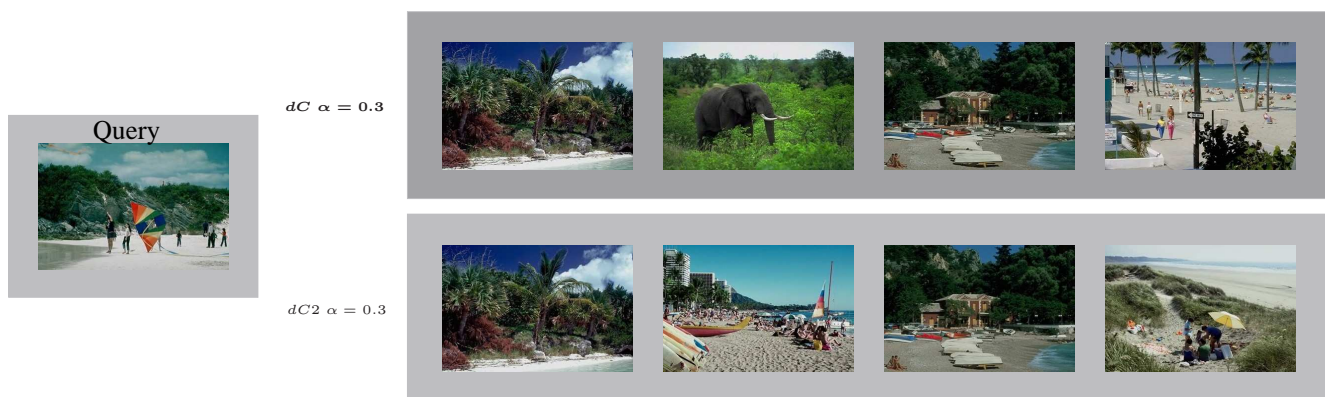


Figure 7.

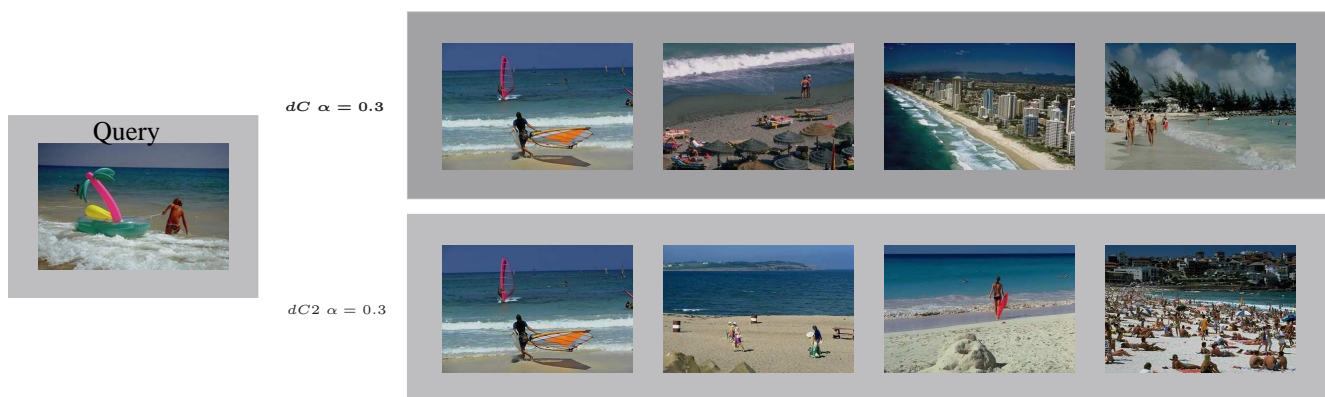


Figure 8.

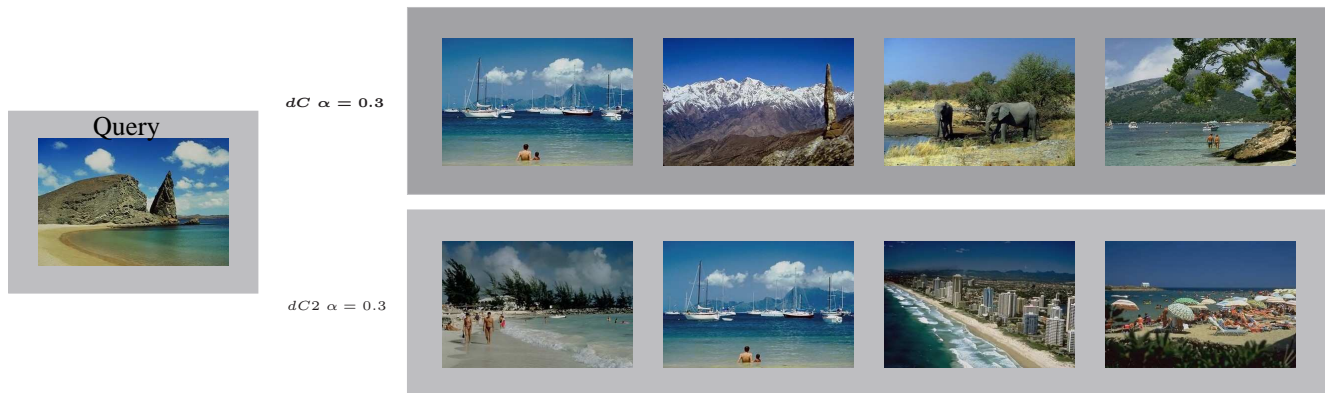


Figure 9.

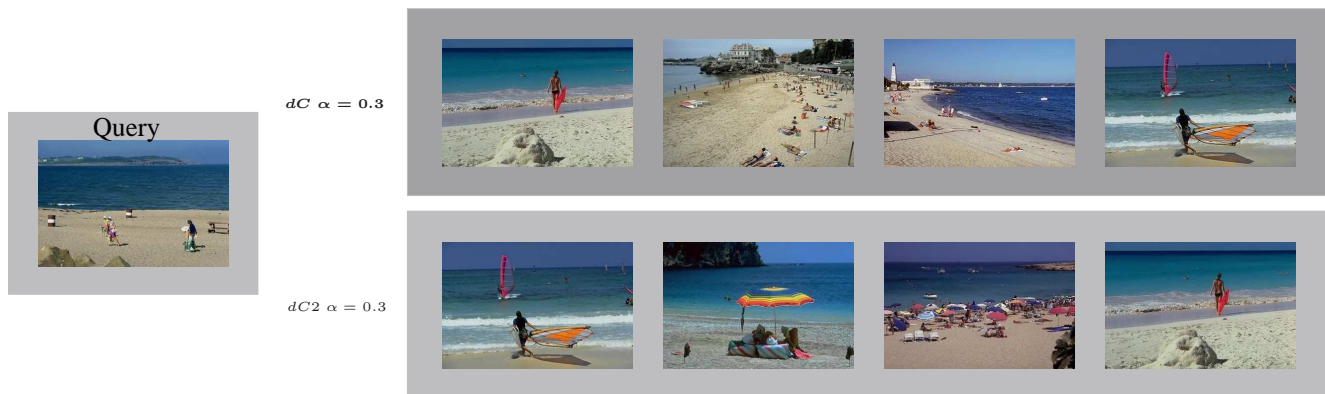


Figure 10.

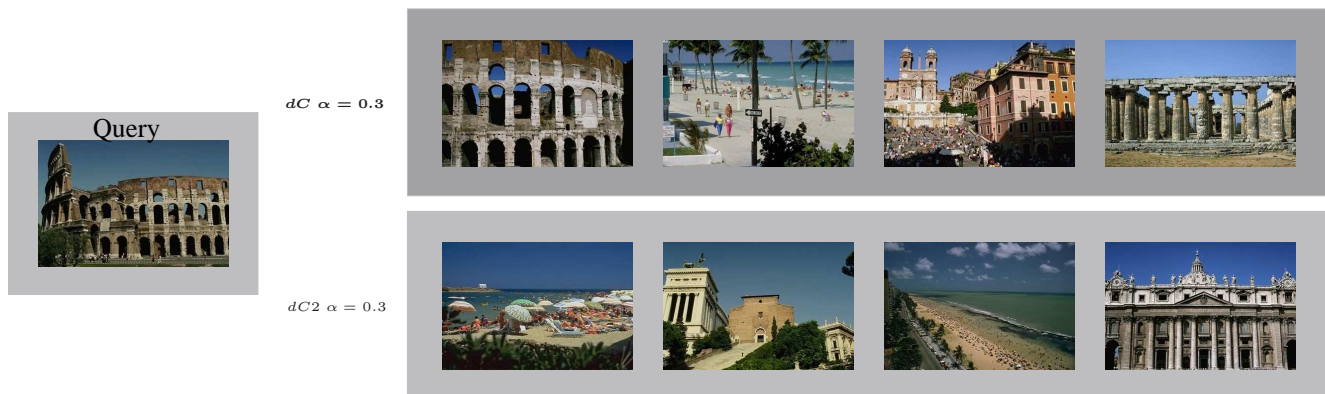


Figure 11.

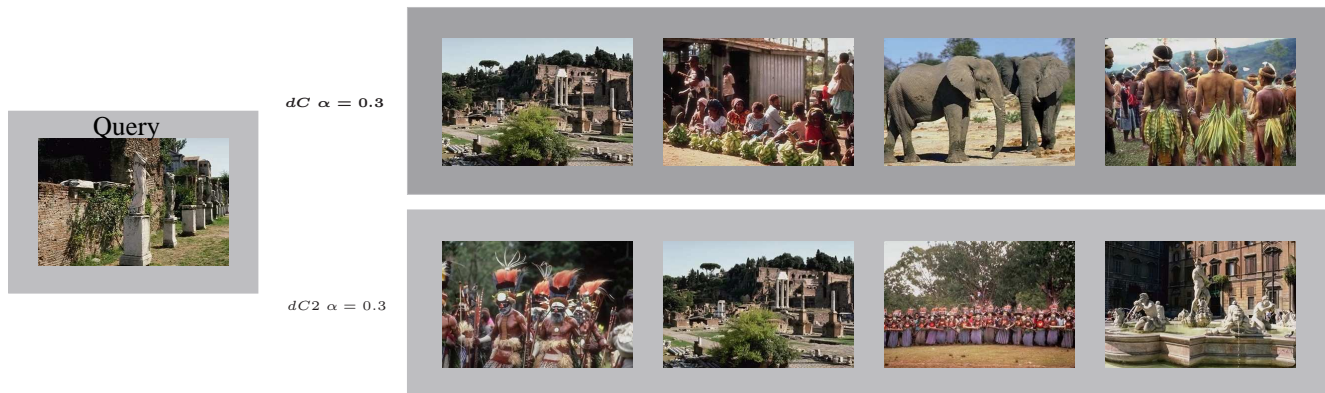


Figure 12.



Figure 13.

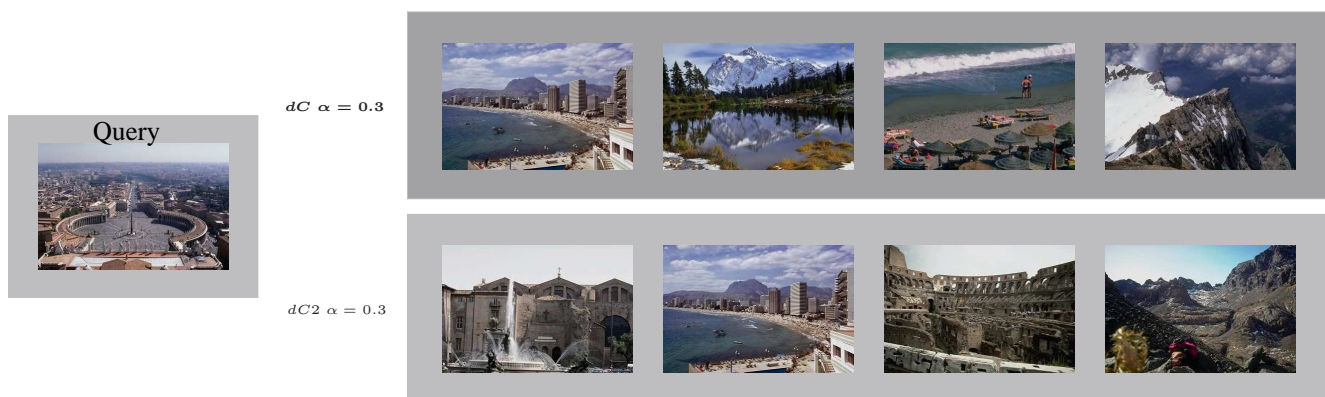
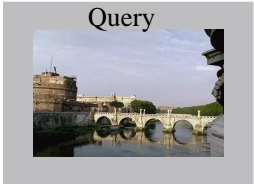


Figure 14.



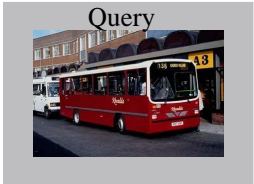
$dC \alpha = 0.3$



$dC2 \alpha = 0.3$



Figure 15.



$dC \alpha = 0.3$



$dC2 \alpha = 0.3$



Figure 16.



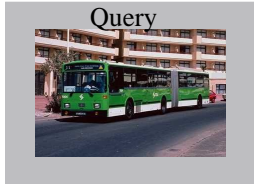
$dC \alpha = 0.3$



$dC2 \alpha = 0.3$



Figure 17.



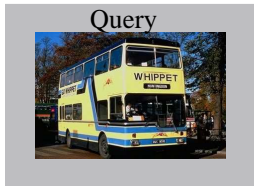
$dC \alpha = 0.3$



$dC2 \alpha = 0.3$



Figure 18.



$dC \alpha = 0.3$



$dC2 \alpha = 0.3$



Figure 19.



$dC \alpha = 0.3$



$dC2 \alpha = 0.3$



Figure 20.



Figure 21.

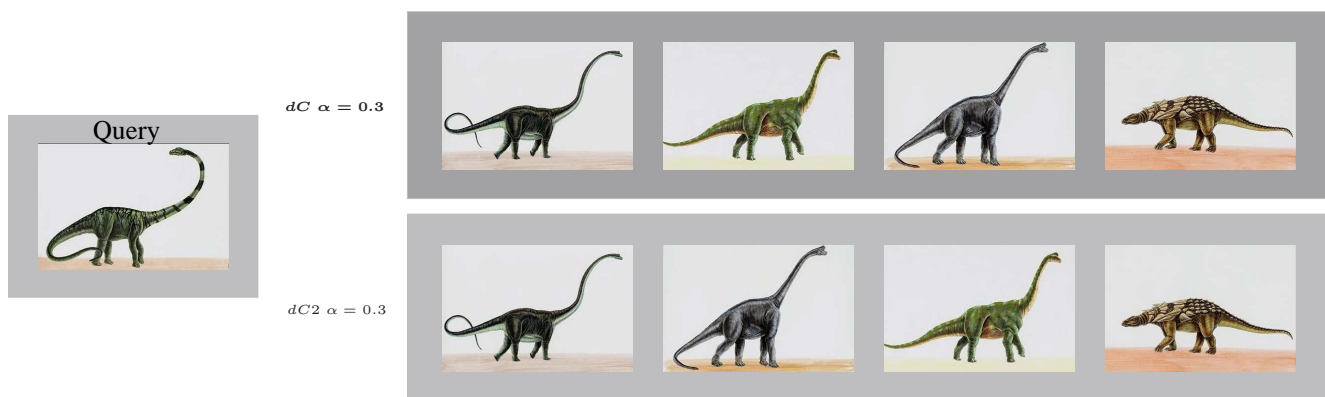


Figure 22.

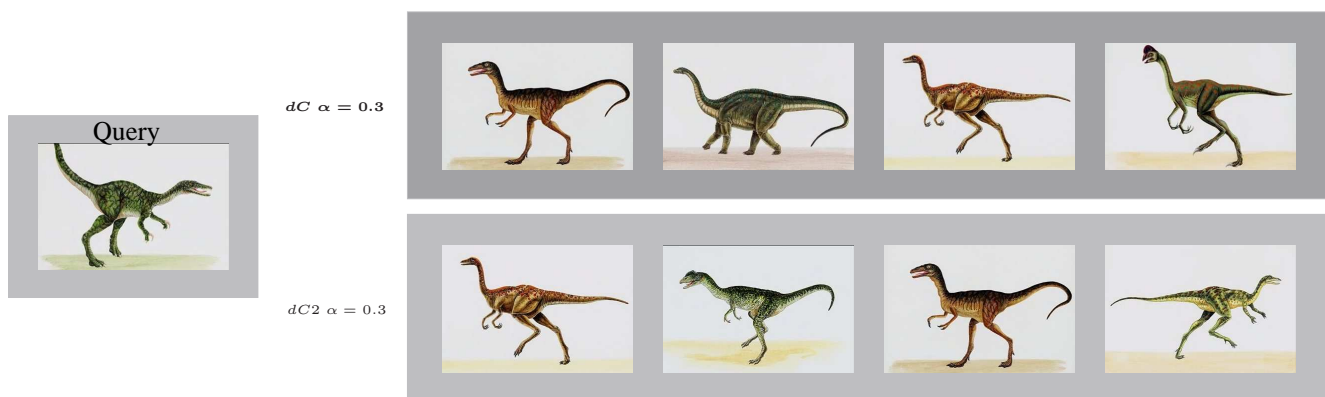


Figure 23.

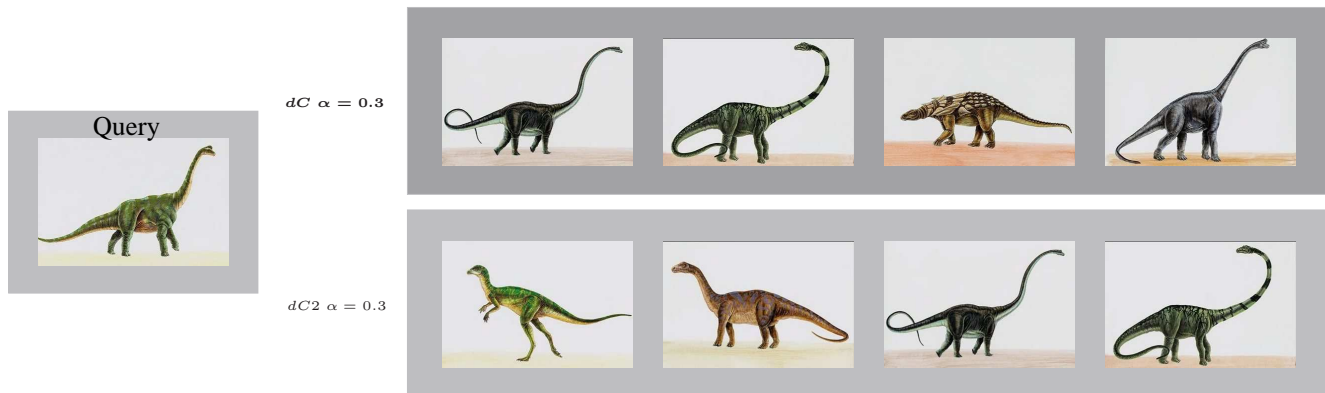


Figure 24.

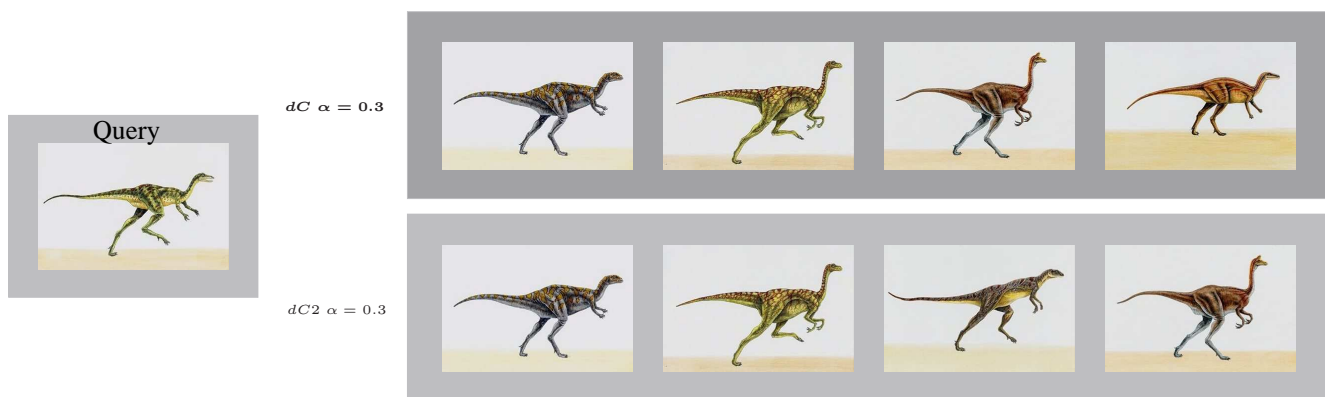


Figure 25.

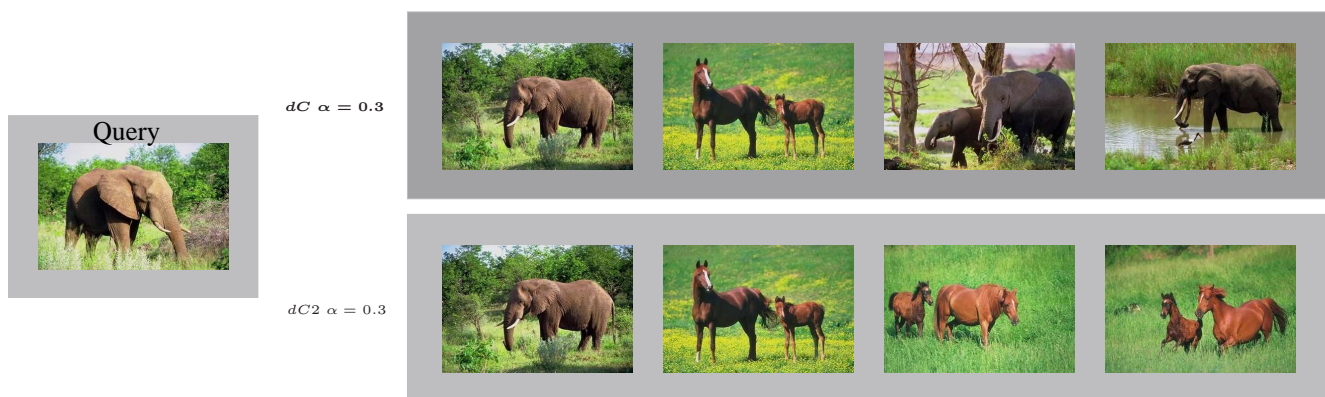


Figure 26.

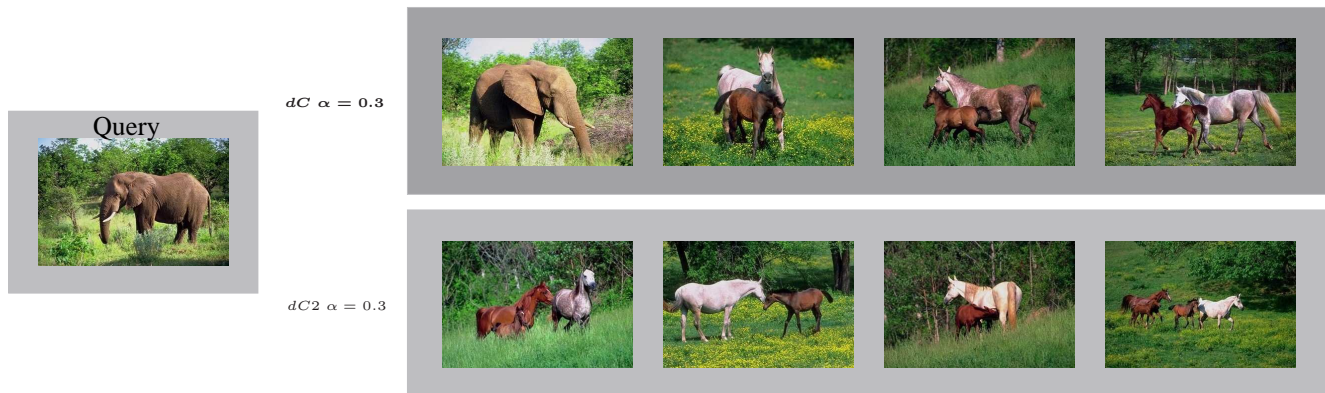


Figure 27.

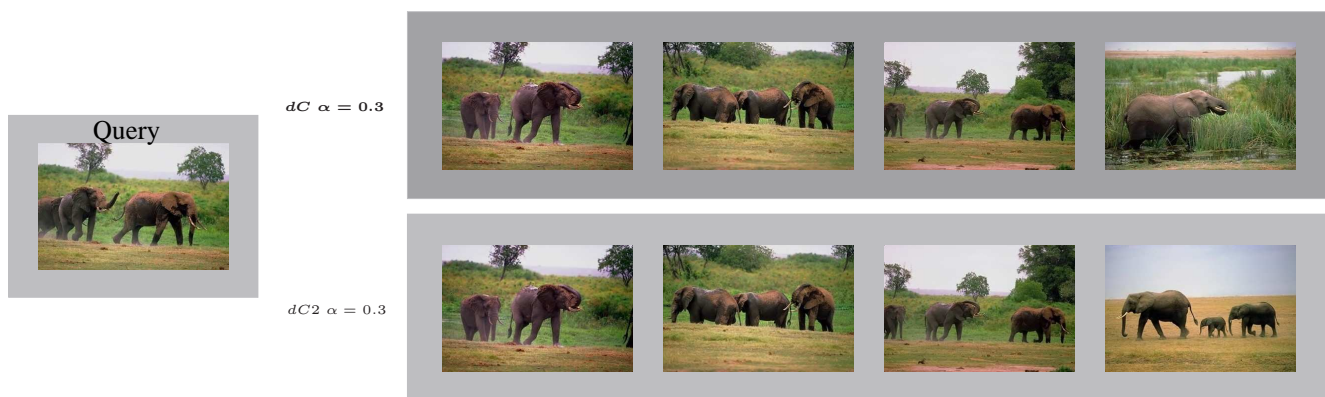


Figure 28.

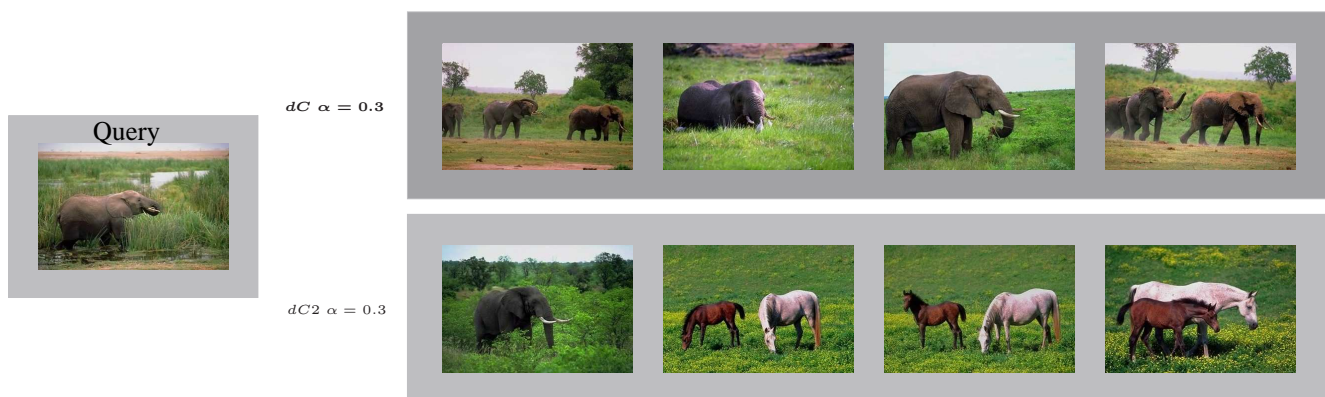


Figure 29.

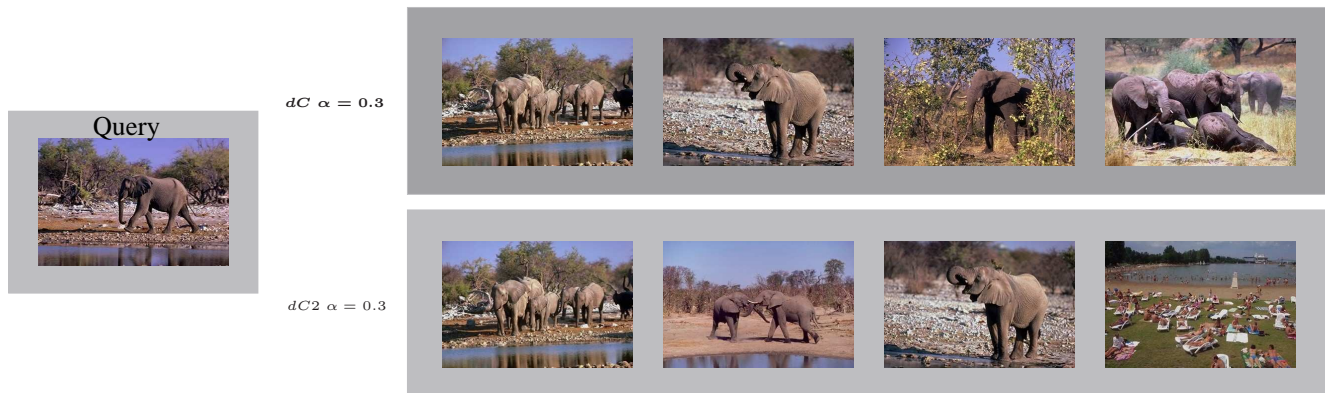


Figure 30.



Figure 31.

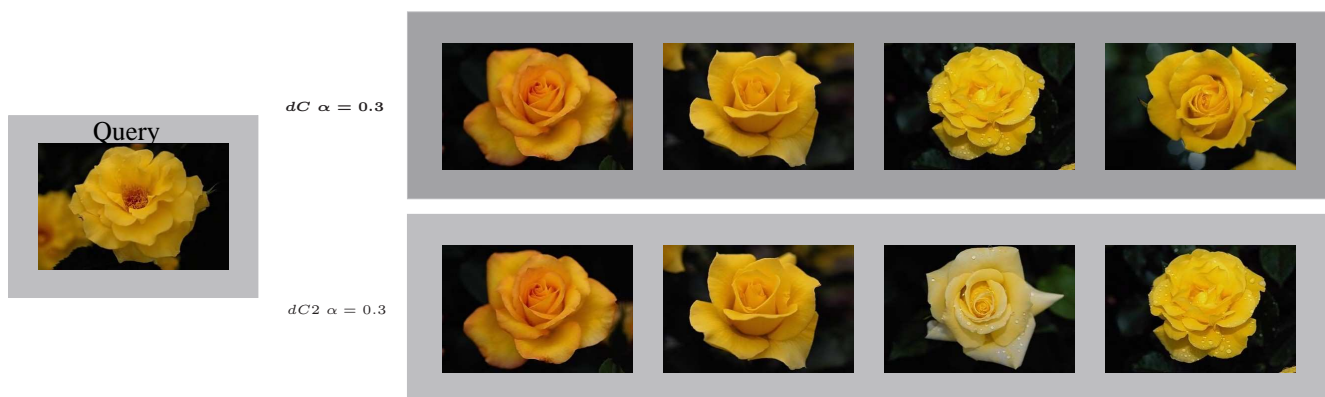


Figure 32.



Figure 33.

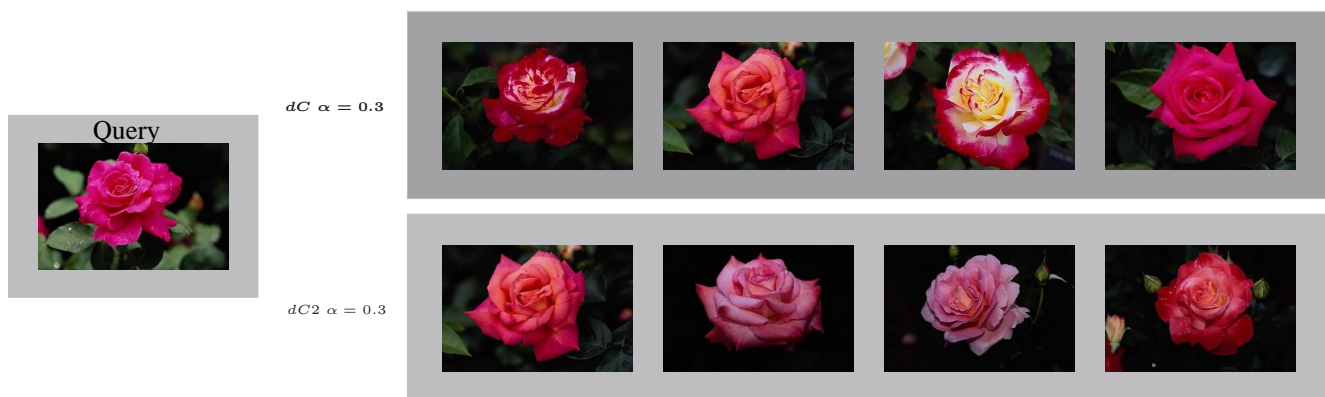


Figure 34.

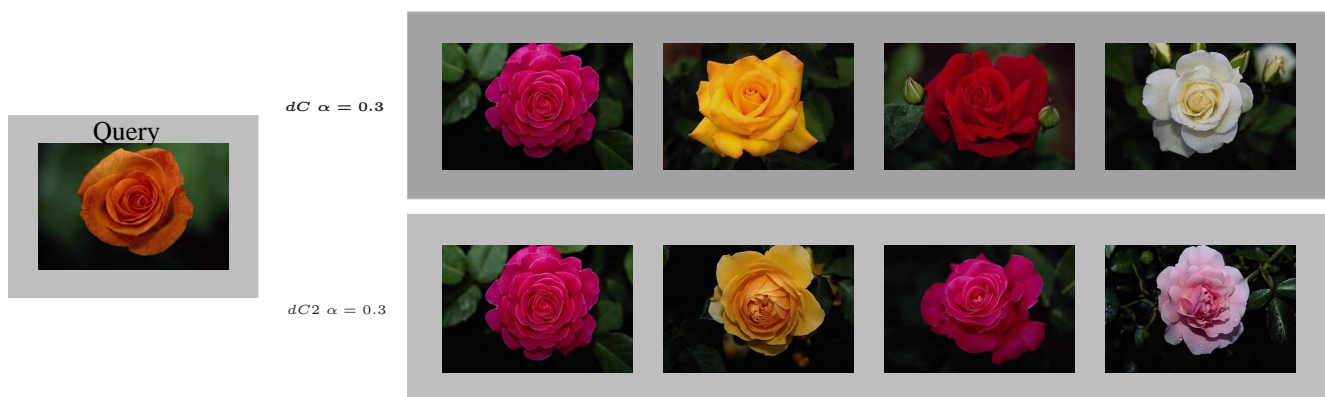


Figure 35.

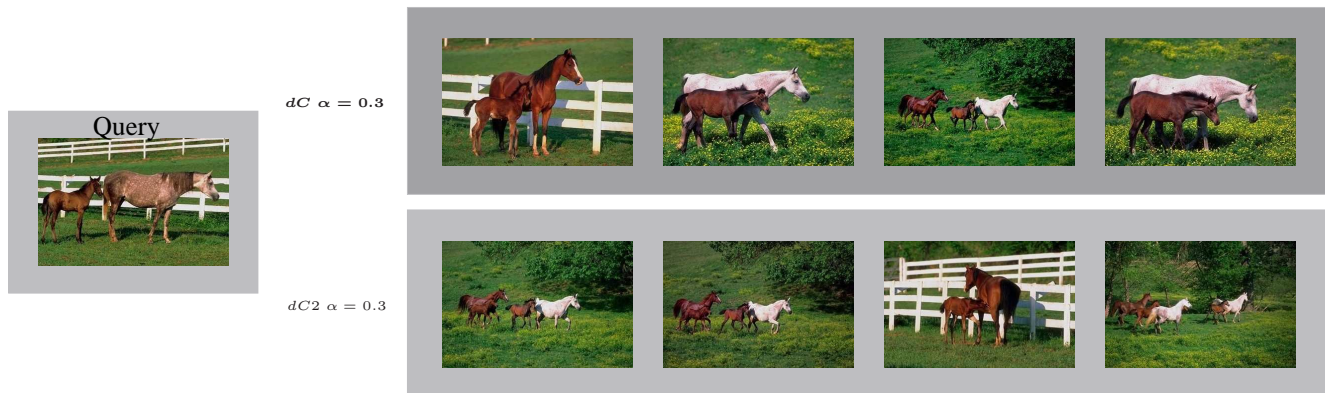


Figure 36.

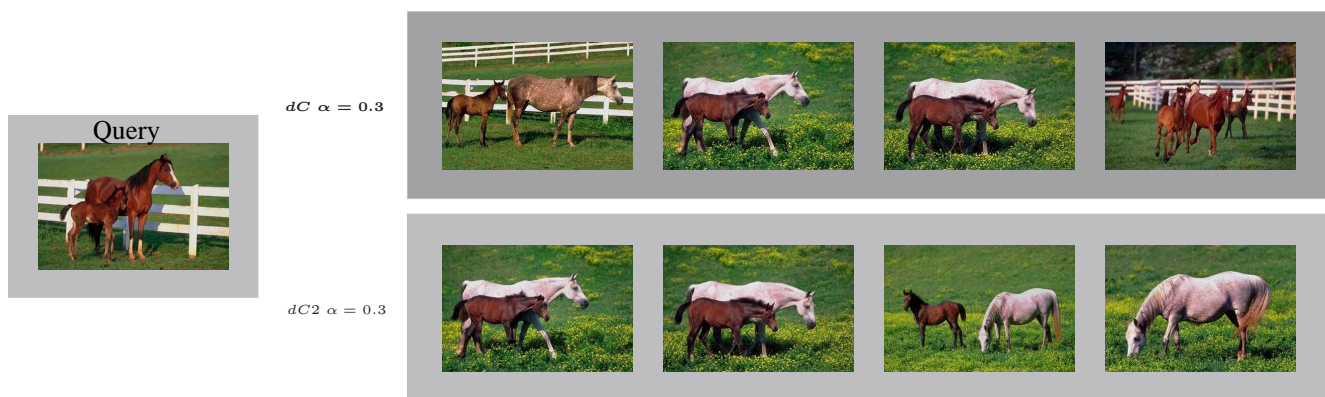


Figure 37.



Figure 38.

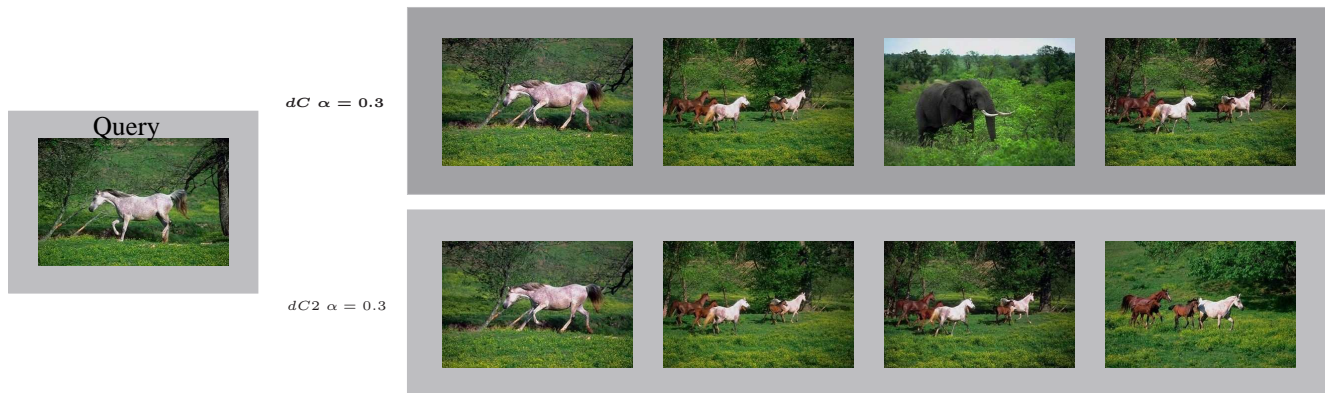


Figure 39.

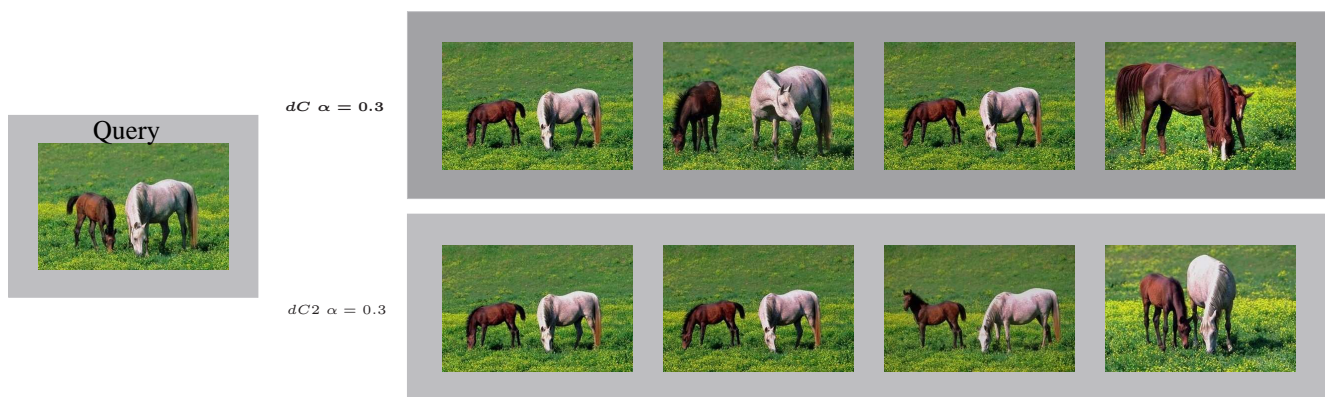


Figure 40.

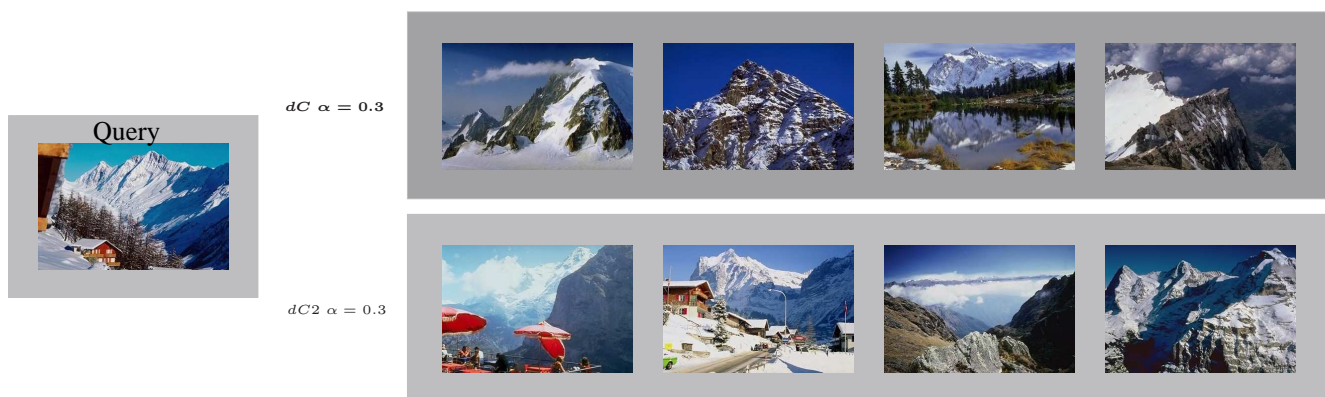


Figure 41.

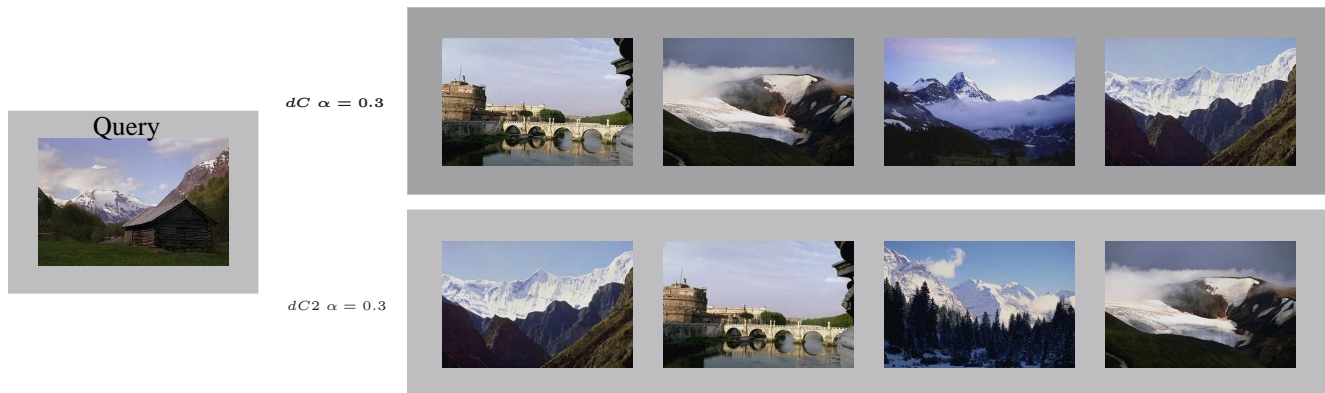


Figure 42.

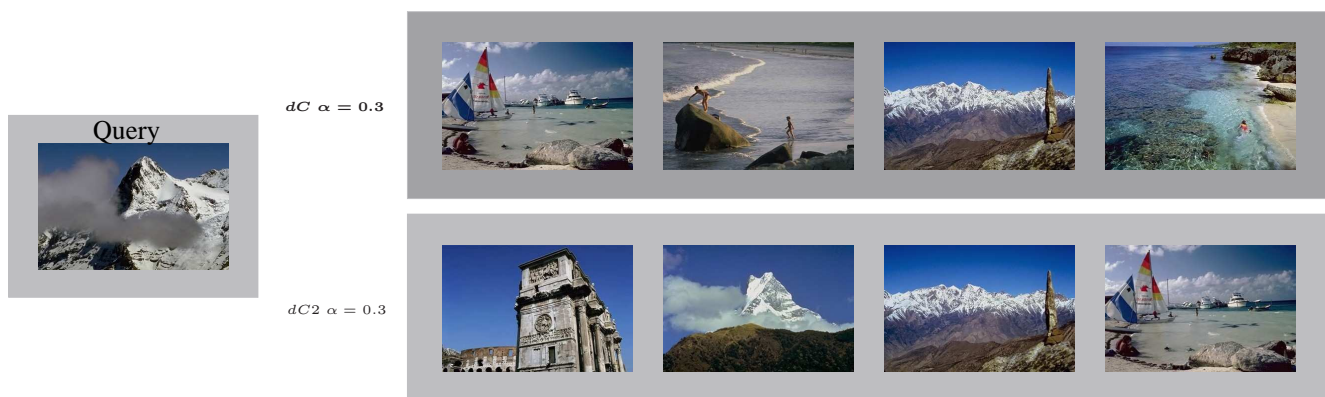


Figure 43.



Figure 44.

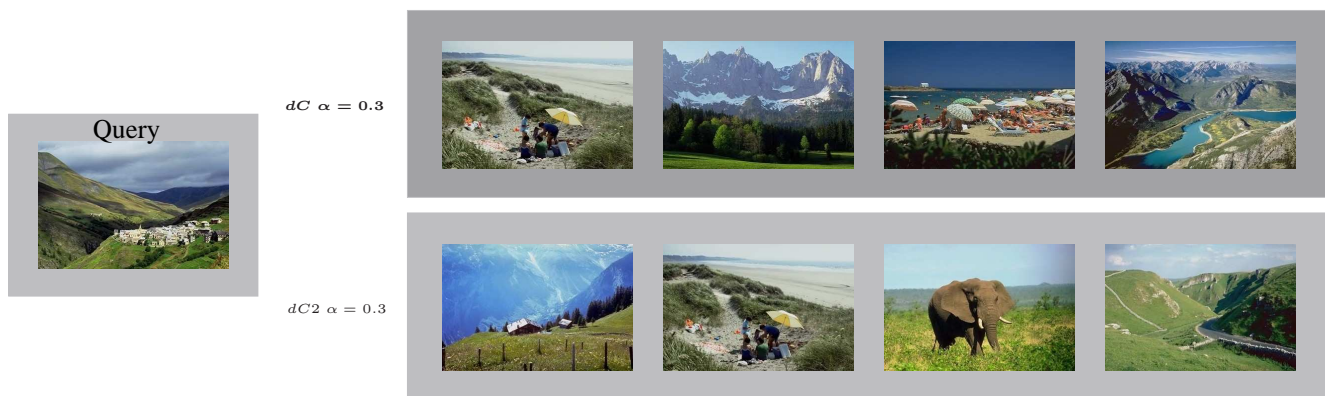


Figure 45.



Figure 46.

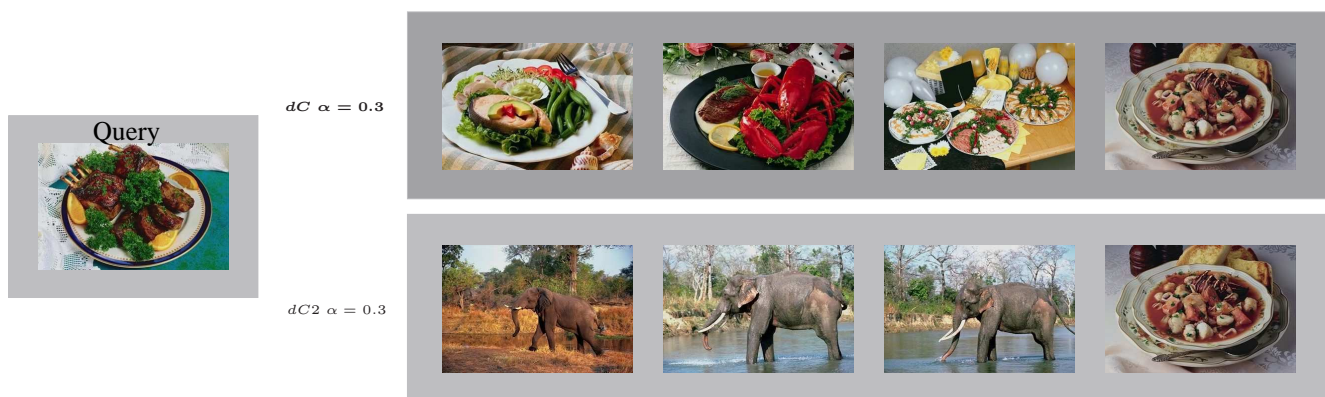
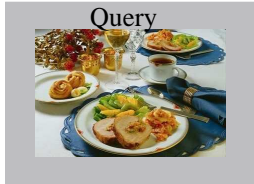


Figure 47.



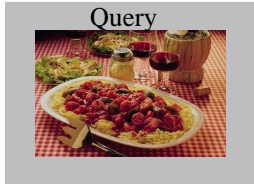
$dC \alpha = 0.3$



$dC2 \alpha = 0.3$



Figure 48.



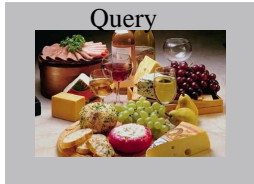
$dC \alpha = 0.3$



$dC2 \alpha = 0.3$



Figure 49.



$dC \alpha = 0.3$



$dC2 \alpha = 0.3$



Figure 50.

References

- [1] O. Pele and M. Werman. Fast and robust earth mover's distances. In *ICCV*, 2009. 1