Supplementary Material for IJCAI 2019

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1 The New Schematic of Figure 6

We save all the images in PNG format, and the new schematic of figure 6 is as below.
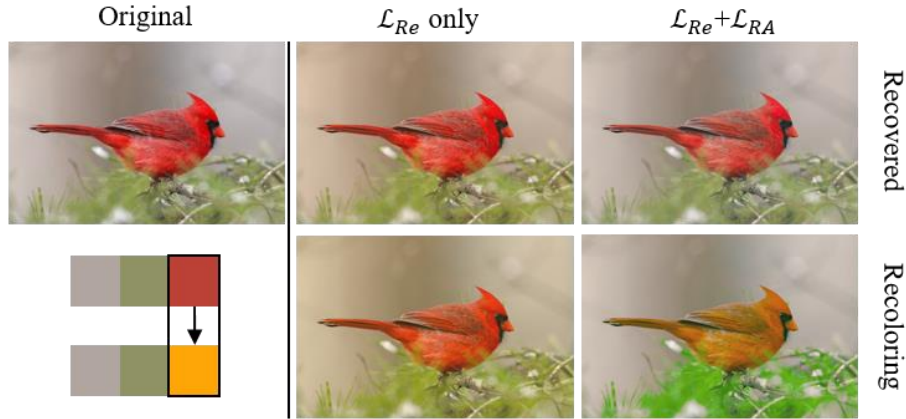

Figure 1: Comparisons of recovered images and recolorings without and with $\mathcal{L}_{RA}$ loss. CUB-200-2011 dataset. [Wah et al., 2011]

2 Palette Extraction Comparison

In Fig. 2 , we compare our approach with the previous palette extraction methods. As [Tan et al. 2018 SIGGRAPH Asia] assume a palette size is at least 4, so we choose the palette size is 4 in (a). One can see that the base colors extracted by our method can represent the color distribution of the image, and the correlation between any two palette colors is lower than clustering algorithm proposed by [Chang et al.].
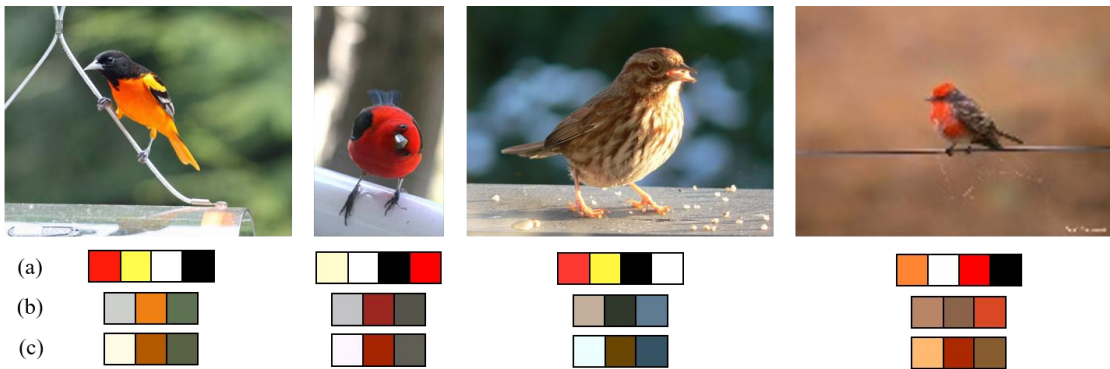

Figure 2: Comparison between our approach and other automatic palette extraction methods. (a)-(c) Result of [Tan et al. 2018 SIGGRAPH Asia], [Chang et al. 2015 TOG], and our proposed method.

3 Image Recoloring compared with PaletteNet

Since there is no public code for PaletteNet to test arbitrary images, we cite its results directly from the CVPR workshop paper, and try to achieve similar recoloring results with our proposed method. As can be seen, our method generates visual pleasing recoloring results. As a contrast, there are some artifacts residual, e.g. color distortion and color bleed, in the results of PaletteNet, as shown in the region marked by the red boxes.
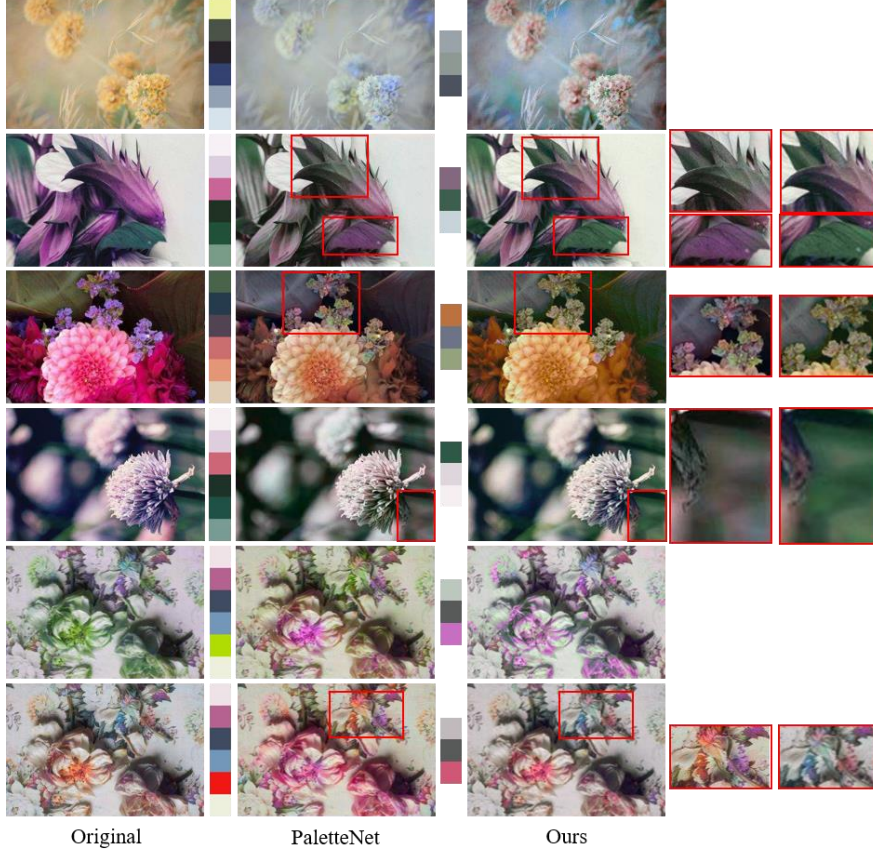

Original   PaletteNet   Ours

Figure 3. A comparison of image recoloring between our proposed method and that of PaletteNet.

4 Color Harmonization Comparison

To compare the quality of image color harmonization with [Color Harmonization. 2007], we cite the results directly from its SIGGRAPH paper, and try to achieve the same harmonic templates of I type with our proposed method as shown in Fig 4. As can be seen that, (b) shows color discontinuities and (c) yields an inconsistent color transfer on the head and neck of the peacock. While our method can harmonize the image with less cost of color transfer with pleasing and natural visual.
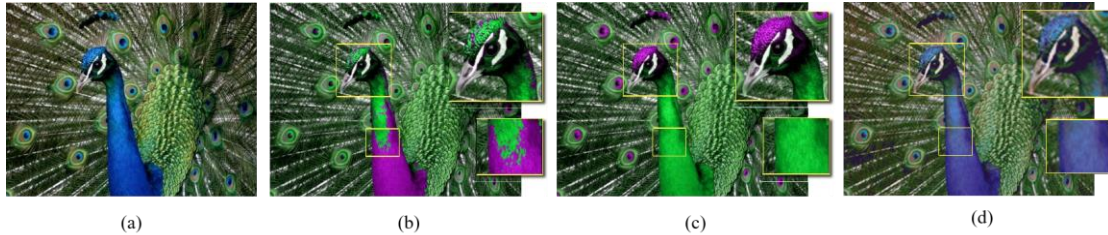

(a)   (b)   (c)   (d)

Figure 4. A comparison of color harmonization between our proposed method and that of [Color Harmonization. 2007 SIGGRAPH].

5 Failure case

Our recoloring doesn't work as expected if the image contains lots of transitional and multiple colors. Figure 3 shows the unnatural artifacts in the color mixing areas marked with red boxes.
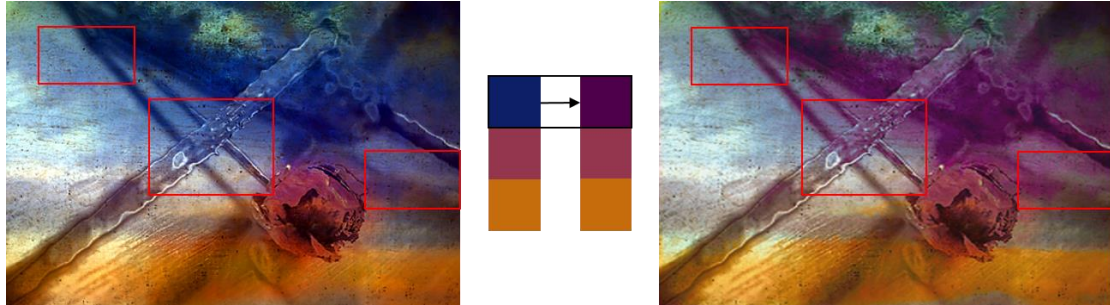

Figure 5. Failure case of image recoloring.