

StyleLight: HDR Panorama Generation for Lighting Estimation and Editing

- Supplementary Material -

A. More visual results

In this section, we provide more visual results to show the effectiveness of the proposed StyleLight, as shown in Figs. 1 and 2.

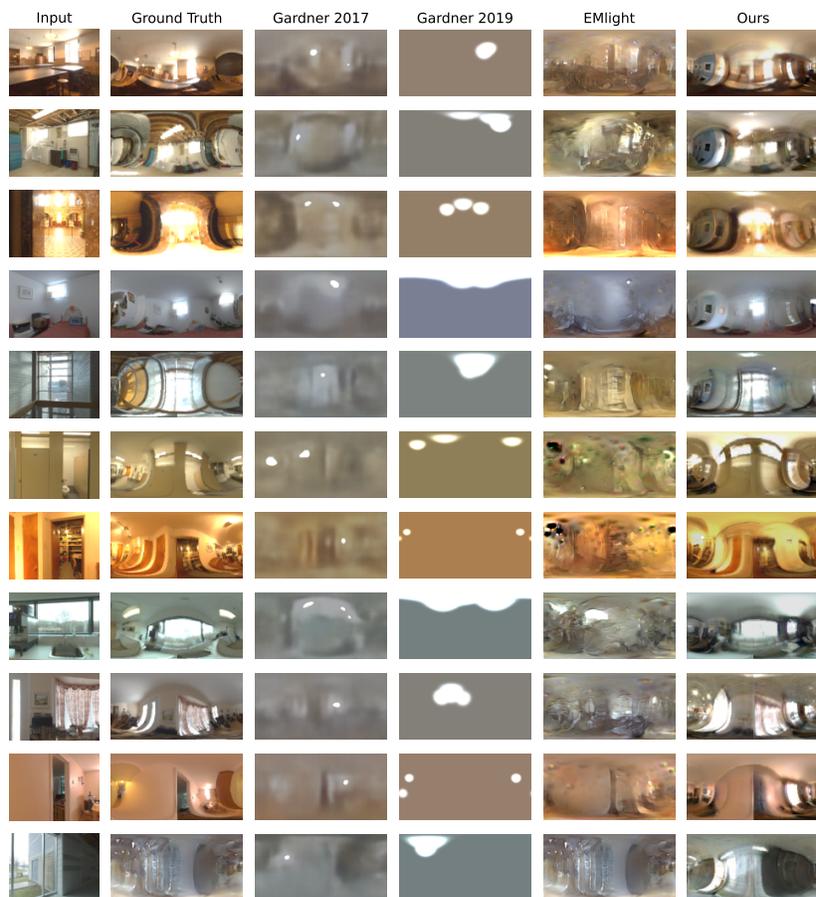


Fig. 1. Visual comparisons of our method with several SOTA methods.

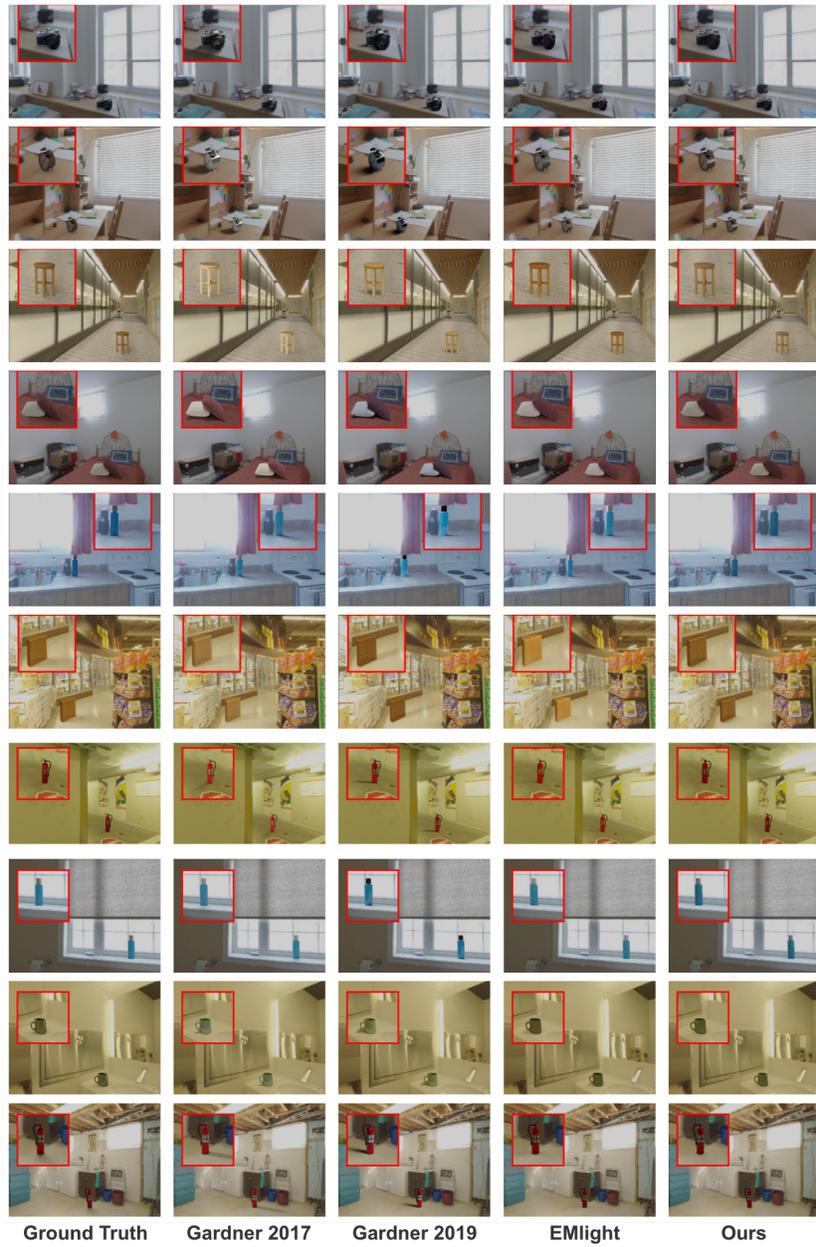


Fig. 2. Visual comparisons on object insertion and lighting. For each input LDR LFOV image, the four different methods estimate illumination maps (at the top-left of LFOV images) for rendering newly inserted objects.

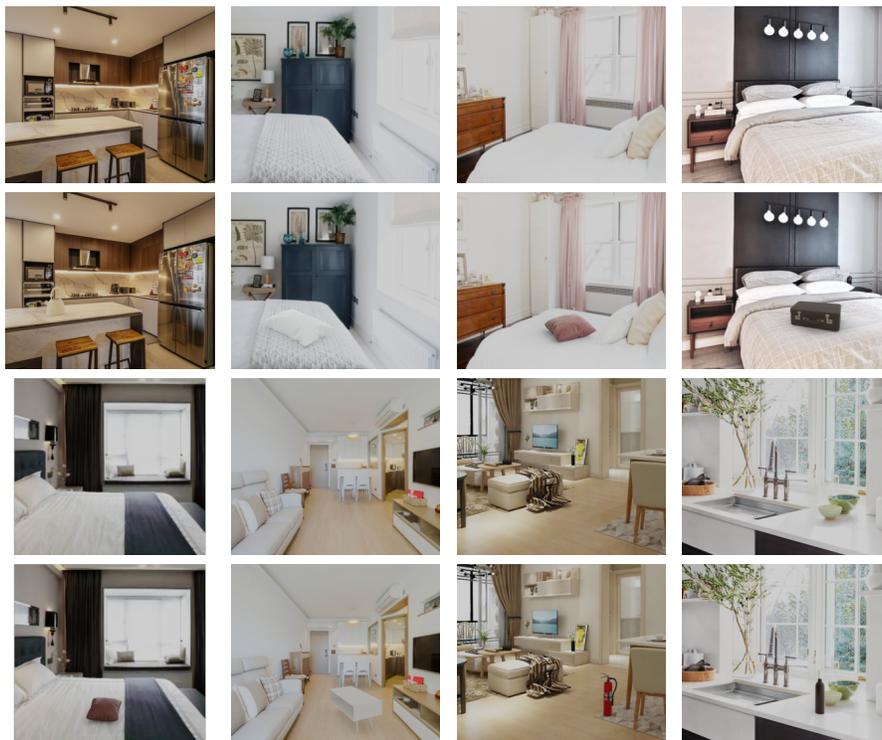


Fig. 3. Object relighting on images from the internet. The four LDR LFOV images are from the internet. We apply StyleLight for lighting estimation on these images and render newly inserted objects.

B. Application on face relighting

We apply StyleLight for face relighting. We use our predicted HDR panoramas and the corresponding ground truth to render human faces obtained by [1], as shown in **Fig. 4**, we see that the rendered results of our predicted HDR panoramas are similar to the ground truth.

C. Applications on the Internet’s images.

We download some LFOV images from the Internet to evaluate the performance of object insertion in the wild. As shown in **Fig. 3**, it is observed that the inserted objects seem realistic in wild scenes.

D. More details about implementation

We provide more details about implementation in the experiments. In Equation 2, we set $\lambda_n = 1e5$. In Equation 3, we set $\lambda_{L2}^R = 10$. In Equation 4, we set

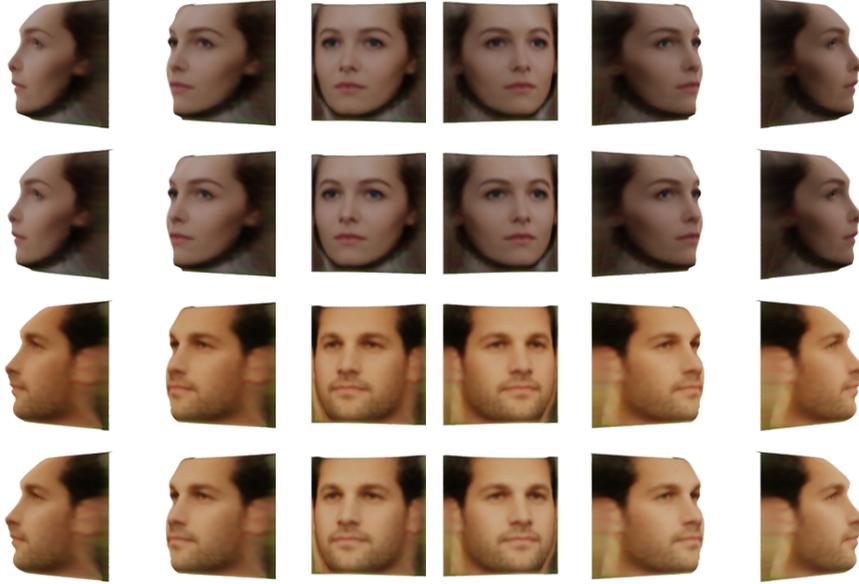


Fig. 4. Comparisons on face rendering results. We show relighting results of human faces. The first and third rows are rendered by ground-truth HDR panorama; And the second and fourth rows are rendered by HDR panorama predicted by our StyleLight model.

$\lambda_{L2}^{R'} = 10$. $\eta = 1$. In Equations 5 and 6, we set $\beta_{L2} = 10$. In Equation 8, we set $\delta = 1$ for decreasing lighting intensity and $\delta = -1$ for increasing lighting intensity.

References

1. Wu, S., Rupprecht, C., Vedaldi, A.: Unsupervised learning of probably symmetric deformable 3d objects from images in the wild. In: Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition. pp. 1–10 (2020) [3](#)