Supplementary Material for Deep Image-Based Relighting from Optimal Sparse Samples

ZEXIANG XU, University of California, San Diego
KALYAN SUNKAVALLI, Adobe Research
SUNIL HADAP, Adobe Research
RAVI RAMAMOORTHI, University of California, San Diego

This supplementary material includes two figures. The first shows the other optimal direction we learn from our joint training process, which are not given in the main paper due to space limitations. The second figure shows a comparison between a Relight-Net trained with $\theta = 90$, $k = 5$ and one with $\theta = 45$, $k = 4$. We can see that for the same relighting direction, a network trained on a smaller cone achieves the same and even better results with fewer samples. This is compatible with what the PSNR distributions show in Fig. 8 in the main paper. Thus, if we only seek to do relighting within a smaller cone of directions, it is possible to use fewer input images, and a network specifically trained for a smaller angular cone θ.
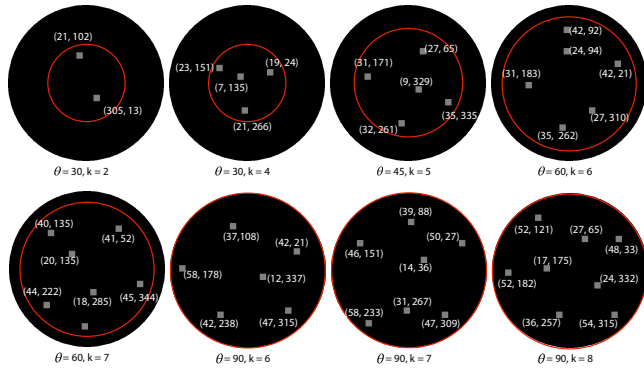
Fig. 1. Learnt optimal directions, for lighting configurations that are not shown in the main paper. We represent directions using the standard (θ, ϕ) spherical parameterization.
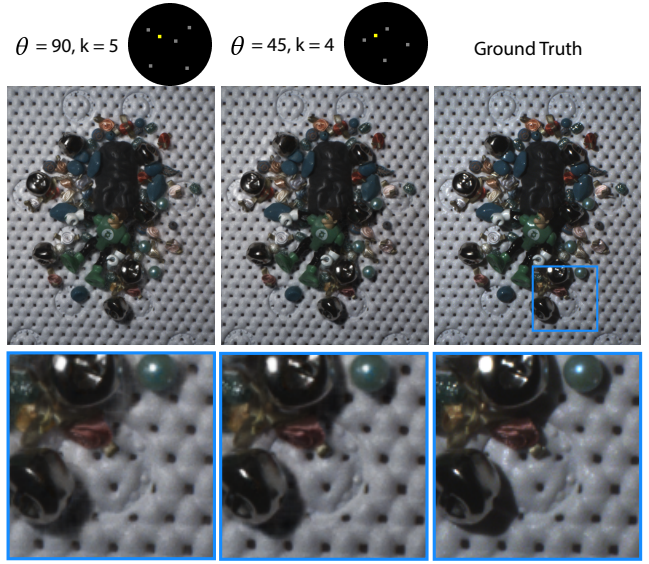

Fig. 2. Comparison between $\theta = 90$, $k = 5$ and $\theta = 45$, $k = 4$. When our network is trained on a smaller cone, a smaller number of samples are required to achieve equal or better performance.