Supplementary Material: Modelling the Scene Dependent Imaging in Cameras with a Deep Neural Network

Seonghyeon Nam
Yonsei University
shnnam@yonsei.ac.kr

Seon Joo Kim
Yonsei University
seonjookim@yonsei.ac.kr

1. Additional Experimental Results

Figure 1, 2, 3 show the additional results of the proposed method for Canon EOS 5D Mark III, Nikon D600, Samsung Galaxy S7, respectively. In all cases, the results of the proposed method are more accurate than the baseline method (SRCNN [1]). For Samsung Galaxy S7, SRCNN shows reasonable results, which indicates the ability of modelling scene dependency. Nevertheless, the results show that the proposed method, learns the global and the local color distribution, is more suitable for scene dependent image processing.

Figure 4 shows some failure cases of the proposed method. Although most of the pixels of a scene are processed according to the scene context, there are some pixels that are processed without looking at the scene context. Therefore, the scene context has negative effect on those pixels. In the future, we plan to extend the proposed method to handle such situations.

References

[1] C. Dong, C. C. Loy, K. He, and X. Tang. Learning a deep convolutional network for image super-resolution. In *Proc. ECCV*, pages 184–199. Springer, 2014. 1, 2, 3, 4, 5

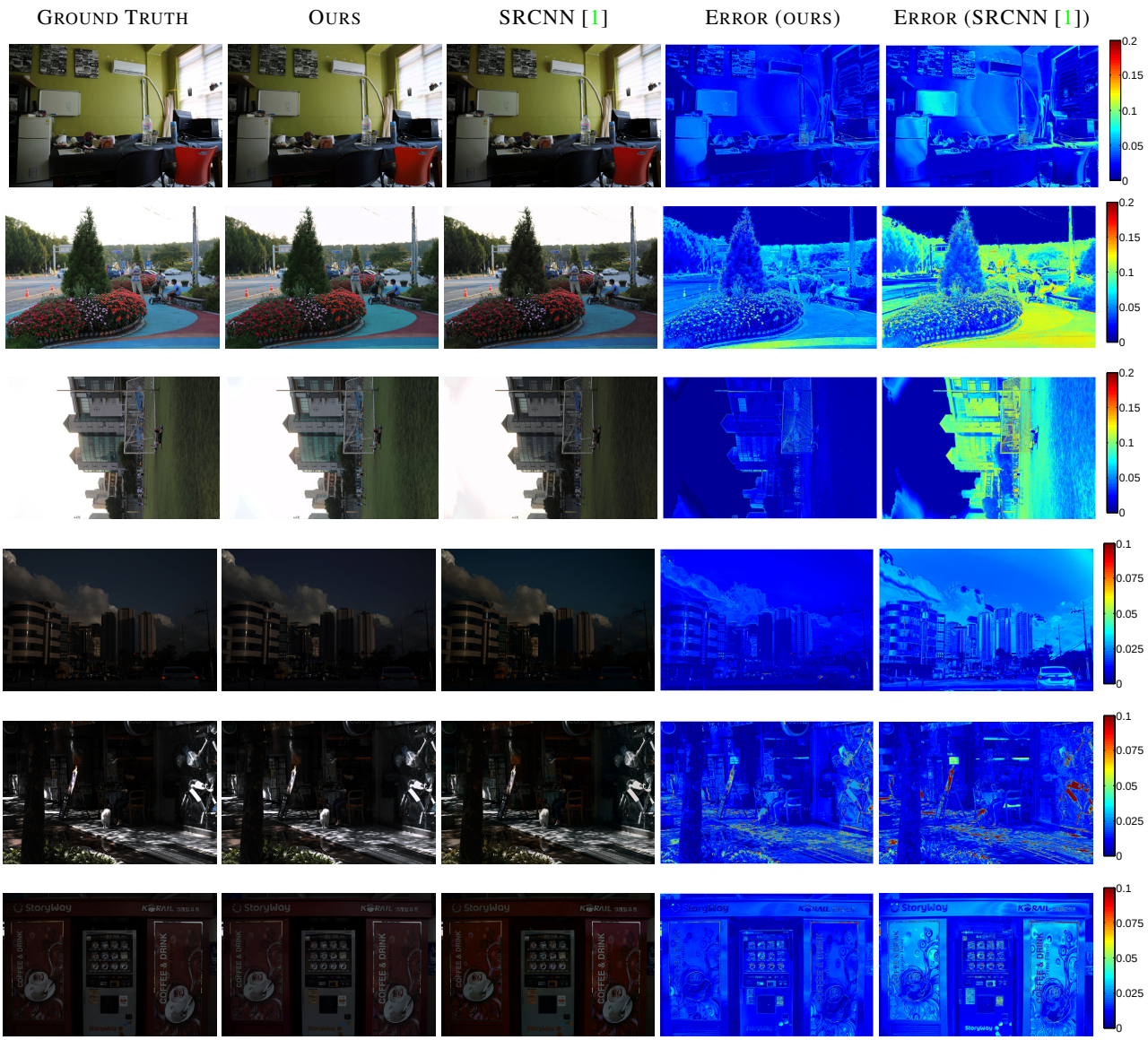

Figure 1. Some additional results for Canon EOS 5D Mark III. Top 3 rows are the RAW to sRGB rendering, and bottom rows are the inverse rendering.

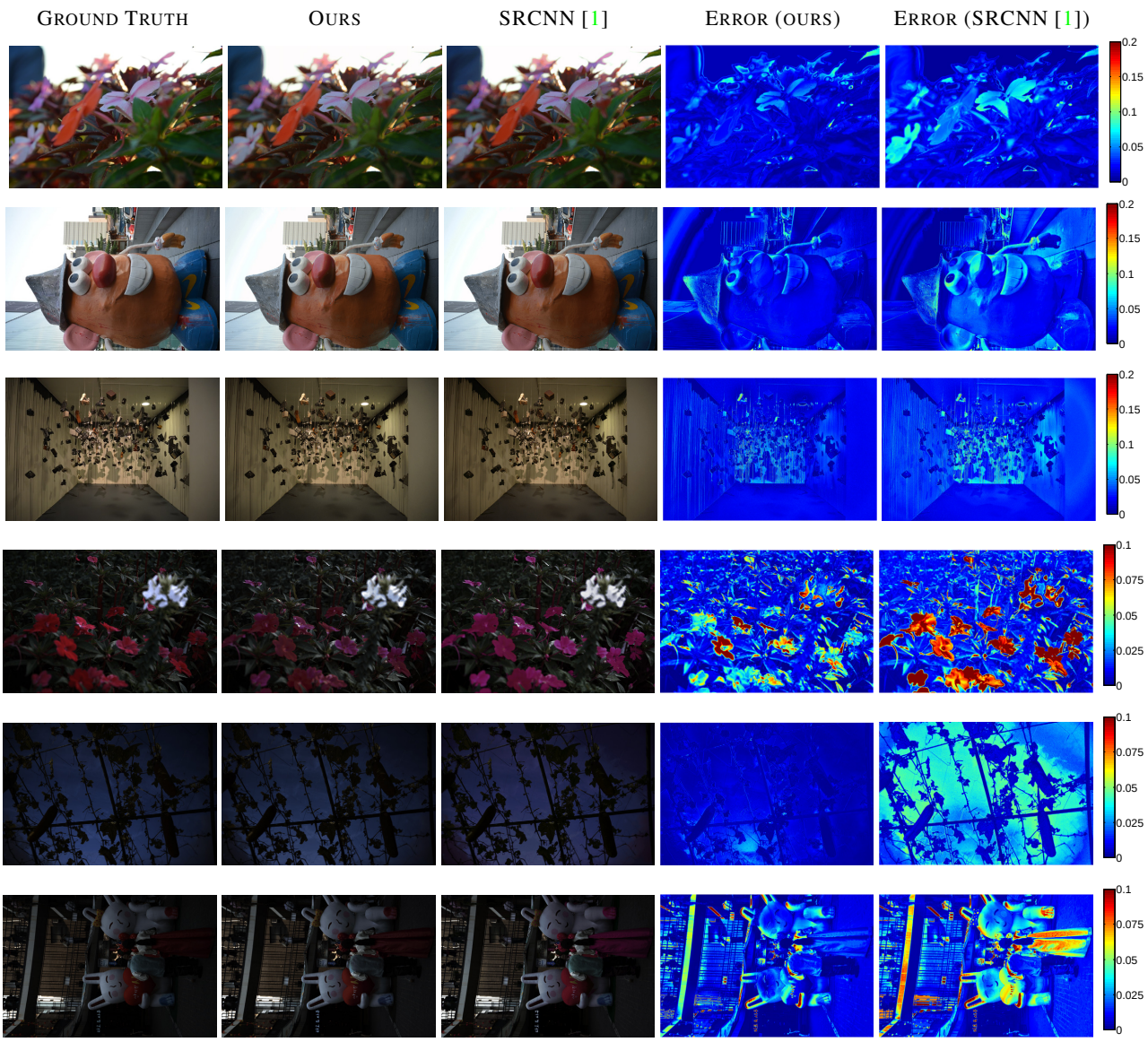

Figure 2. Some additional results for Nikon D600. Top 3 rows are the RAW to sRGB rendering, and bottom rows are the inverse rendering.

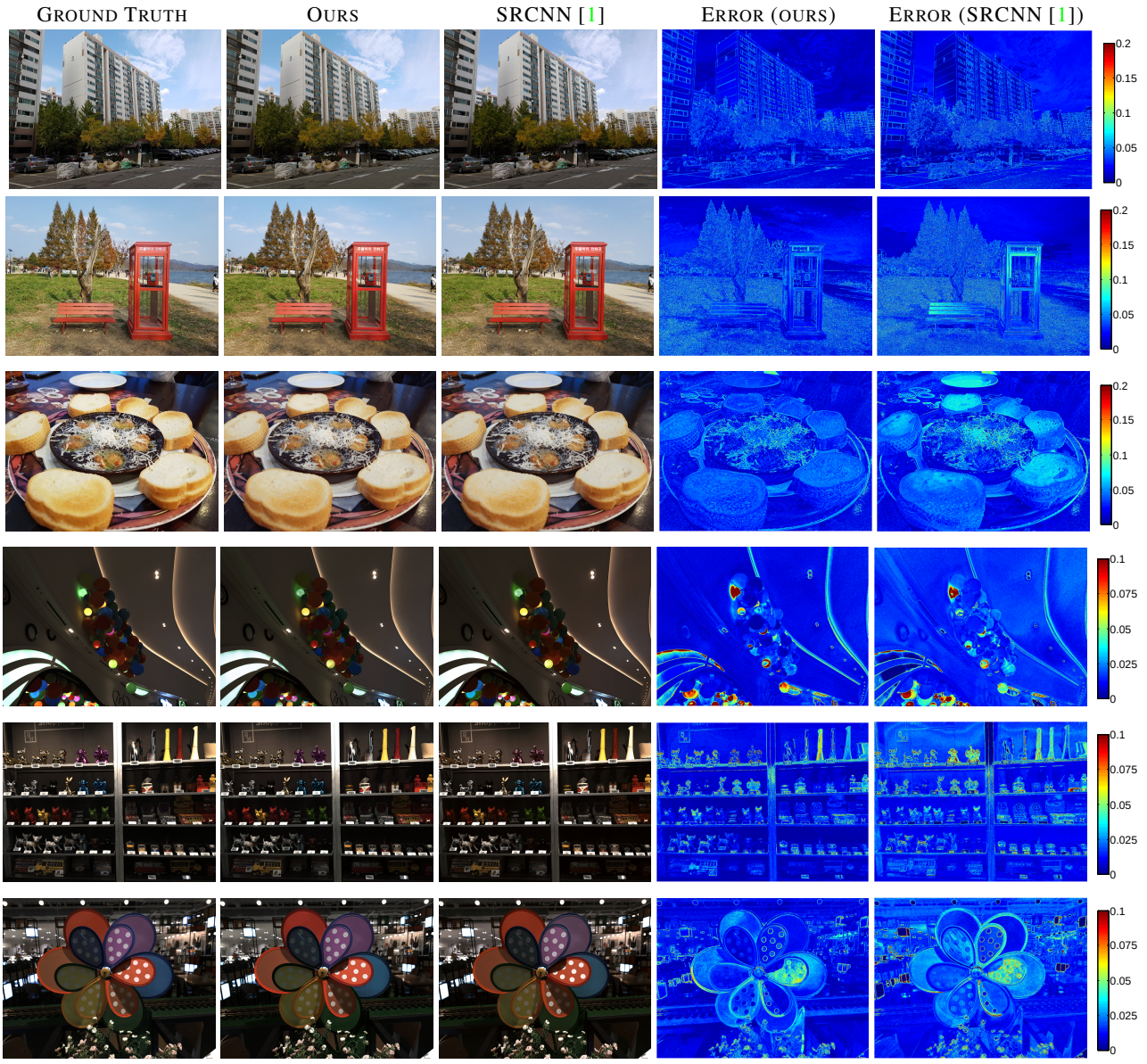

Figure 3. Some additional results for Samsung Galaxy S7. Top 3 rows are the RAW to sRGB rendering, and bottom rows are the inverse rendering.

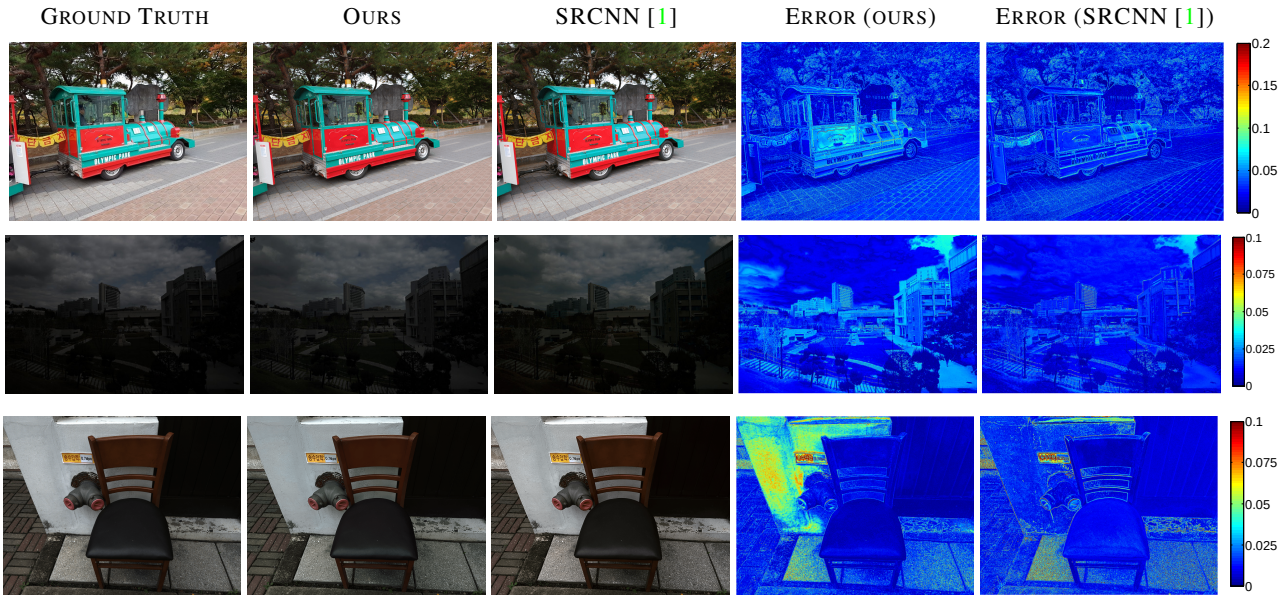

Figure 4. Some failure cases of the proposed method.