Single Image Super-Resolution via a Dual Interactive Implicit Neural Network: Supplementary Material

Quan H. Nguyen and William J. Beksi
The University of Texas at Arlington
Arlington, TX, USA
quan.nguyen4@mavs.uta.edu, william.beksi@uta.edu

1. Additional Qualitative Results

To complement Section 4.4 in the main paper, we provide qualitative results on our final model at various scale factors, Figure 1. For each row, the LR image (first column) is obtained by downscaling the HR image (last column, same for all rows). The model generates the SR image (second column) whose size is the same as the HR image. In contrast to the experiment in Section 4.4, the LR inputs are different. We observe that the artifacts mentioned in Section 4.4 do not appear when the LR image is of higher quality (*e.g.*, $\times 2$, $\times 3$, or $\times 4$). We only observe these artifacts when the LR image is obtained by downscaling the HR image at higher scale factors (*e.g.*, $\times 6$ and $\times 8$).

In Figure 2, we show qualitative results on the six models presented in the ablation study (Section 4.5). Here, the results are similarly obtained by the experiment in Section 4.4. Compared to model (f), models (b) and (c) contain more artifacts around the boundaries of the LR pixels as well as near the border of the SR images. With respect to [1], this further confirms that our design choices have a positive effect on SISR. Additionally, when comparing models (a) and (b), (c) and (d), or (e) and (f), we observe qualitative results that are consistent with the quantitative results presented in the main paper (*e.g.*, fewer artifacts from models without the initialization of the positional features).

References

[1] Ishit Mehta, Michaël Gharbi, Connelly Barnes, Eli Shechtman, Ravi Ramamoorthi, and Manmohan Chandraker. Modulated periodic activations for generalizable local functional representations. In *Proceedings of the IEEE/CVF International Conference on Computer Vision*, pages 14214–14223, 2021.
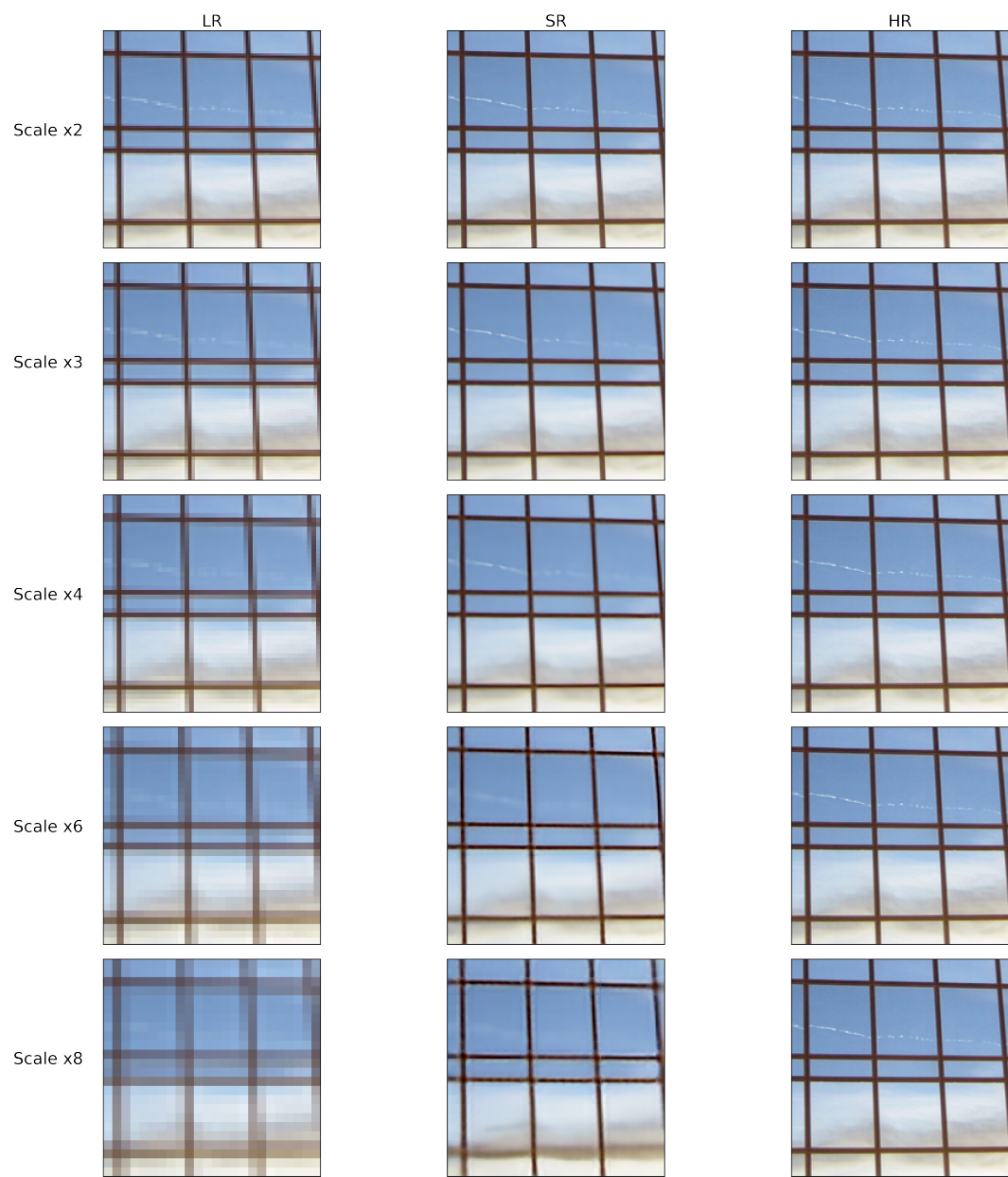
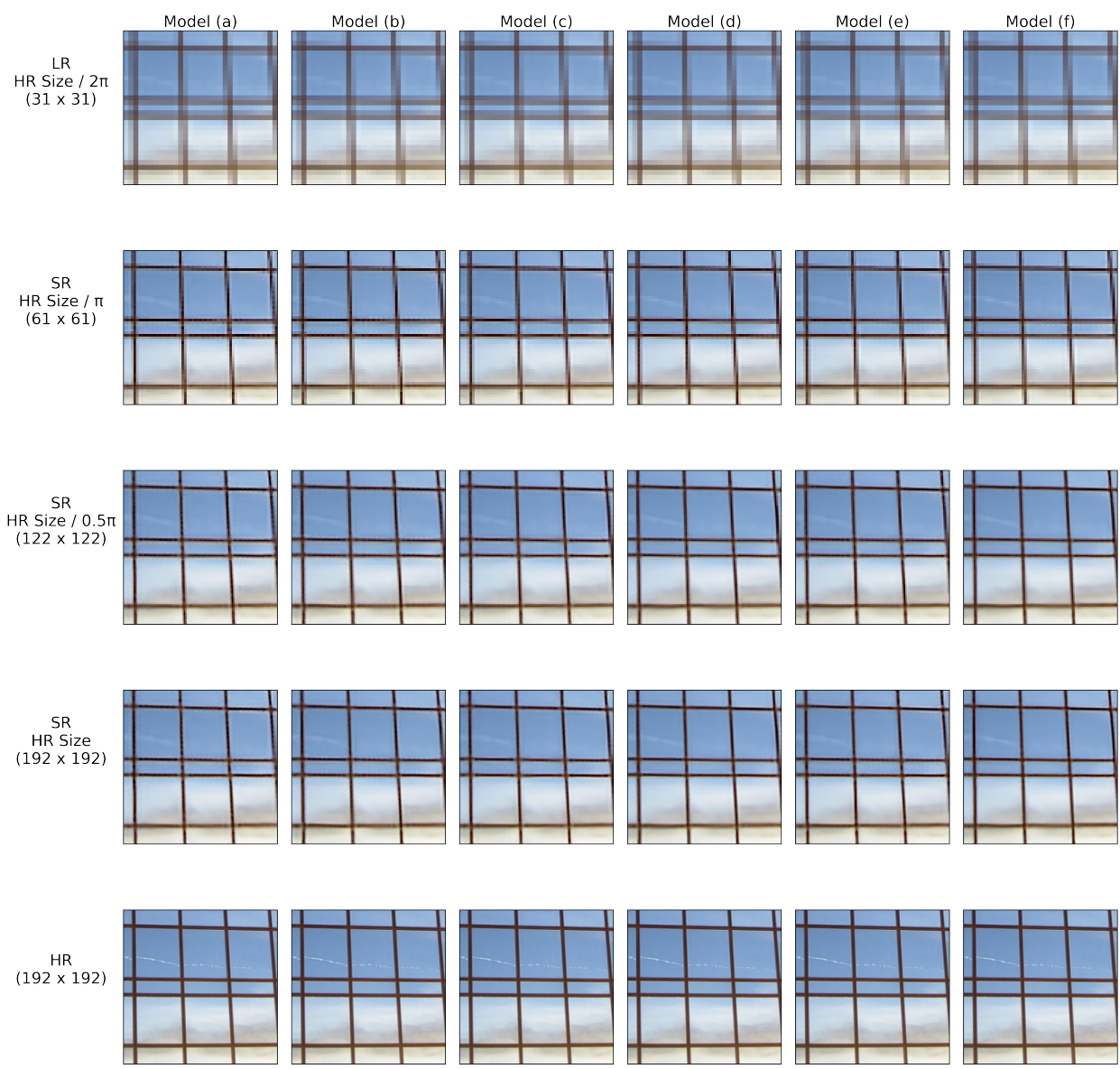Figure 1: Qualitative results using our final model.

Figure 2: Qualitative results produced by variations of our model on an image patch from the Urban100 dataset.