IMPROVING NOVEL VIEW SYNTHESIS OF 360° SCENES IN EXTREMELY SPARSE VIEWS BY JOINTLY TRAINING HEMISPHERE SAMPLED SYNTHETIC IMAGES

1. Supplementary Materials

Our approach is evaluated on nine selected scenes across the two large-scale real-world datasets: Mip-NeRF 360 [1] and Tanks&Temples [3]. We use the 3DGS [2] splitting strategy to divide each scene into training and test sets. For training, we filter out images lacking centrally positioned objects, then select four diverse views that ensure complete 360° coverage and varied camera angles. The test sets are reserved for evaluation. Figure 1 and Figure 2 illustrate the selected training images and the camera distribution for both the training and test sets.

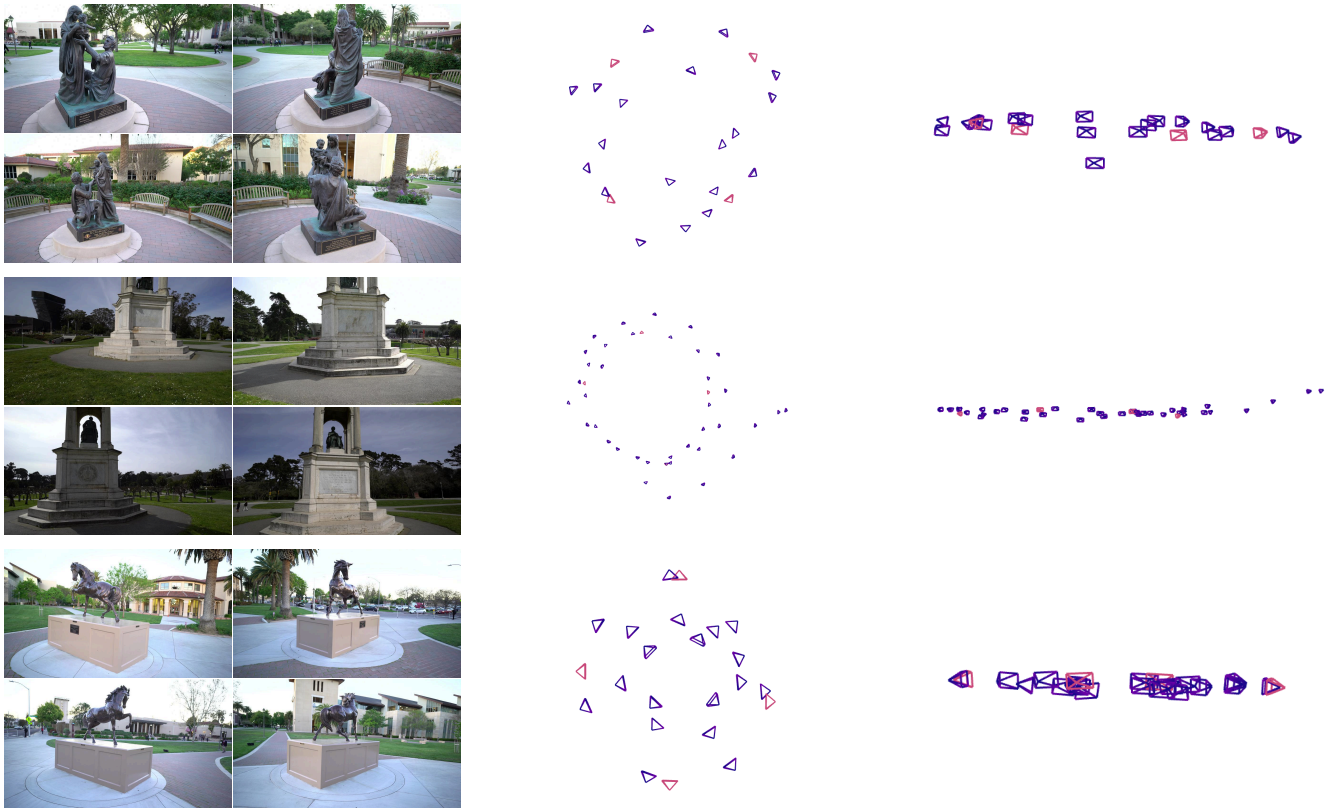

Fig. 1: Training images and camera distribution for selected scenes from the Tanks&Temples dataset (family, francis, and horse). (a) Training images; (b) top view of camera distribution with training cameras in red and test cameras in blue; (c) side view of camera distribution with training cameras in red and test cameras in blue.

Fig. 2: Training images and camera distribution for selected scenes from the Mip-NeRF 360 dataset (kitchen, garden, bicycle, bonsai, stump, and treehill). (a) Training images; (b) top view of camera distribution with training cameras in red and test cameras in blue; (c) side view of camera distribution with training cameras in red and test cameras in blue.

2. References

[1] J. T. Barron, B. Mildenhall, D. Verbin, P. P. Srinivasan, and P. Hedman. Mip-NeRF 360: Unbounded Anti-Aliased Neural Radiance Fields. In *IEEE Conference on Computer Vision and Pattern Recognition*, pages 5470–5479, 2022.

[2] B. Kerbl, G. Kopanas, T. Leimkühler, and G. Drettakis. 3D Gaussian Splatting for Real-Time Radiance Field Rendering. *ACM Transactions on Graphics*, 42(4):139–1, 2023.

[3] A. Knapitsch, J. Park, Q.-Y. Zhou, and V. Koltun. Tanks and temples: benchmarking large-scale scene reconstruction. *ACM Transactions on Graphics*, 36(4):1–13, 2017.