GaussianSpa: An "Optimizing-Sparsifying" Simplification Framework for Compact and High-Quality 3D Gaussian Splatting

Supplementary Material

7. Additional Results

7.1. Additional Quantitative Results

We summarize additional quantitative results on the Mip-NeRF 360, Tanks&Temples, and Deep Blending datasets in Table 3, Table 4, and Table 5, respectively. We plot additional PSNR-#Gaussians curves on diverse Scenes in Figure 14, in comparison with Mini-Splatting [17] and LightGaussian [16]. It can be observed that with the same number of Gaussians, our GaussianSpa shows superior rendering outcomes.

7.2. Additional Visual Quality Results

Figure 10 and Figure 11 provide additional rendered images comparing GaussianSpa with LightGaussian [16], Mini-Splatting [17], and original 3DGS on various scenes. Those additional results demonstrate our GaussianSpa achieves stronger representational power for background and detail-rich areas such as walls, carpets, and ladders, showcasing superior rendering qualities. Furthermore, Figure 12 and Figure 13 offer additional rendered Gaussian ellipsoids and point cloud views, respectively. These results further illustrate that GaussianSpa creates a high-quality sparse 3D representation that adaptively uses more Gaussians to represent high-frequency areas.

8. Additional Discussion

Convergence Analysis. We analyze the convergence behavior of GaussianSpa by examining the effects of hyperparameters such as δ , which controls the sparsity strength in Eq. 10, and the interval at which the "sparsifying" step is performed, as described in Section 3. Figure 9 shows loss curves for various δ and interval values, indicating similar convergence rates during our "optimizing-sparsifying"-integrated training process. After removing "zero" Gaussians at iteration 25K, the loss curve continues to converge consistently, confirming GaussianSpa's feasibility.

Method	PSNR↑	SSIM↑	LPIPS↓	Storage↓
EfficientGS [28]	27.38	0.817	0.216	98 MB
LightGaussian [16]	27.28	0.805	0.243	42 MB
GaussianSpa	27.85	0.825	0.214	25 MB

Table 2. Storage comparison evaluated on the Mip-NeRF 360 dataset. GaussianSpa's storage cost is reported based on the add-on compression methods (i.e., SH distillation and vector quantization) from LightGaussian [16].

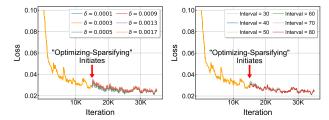


Figure 9. Loss curves with multiple (left) δ and (right) interval settings. The curves show that GaussianSpa exhibits a good convergence behavior in the "optimizing-sparsifying"-integrated training process.

Bicycle 3DGS Mini-Splatting GaussianSpa 25.13 25.21 0.760 0.760 0.247 0.247 0.646 0.656 Bonsai 3DGS Mini-Splatting GaussianSpa 32.19 31.73 0.950 0.945 0.180 0.360 1.250 0.360 Bonsai Mini-Splatting GaussianSpa 32.40 29.21 0.945 0.947 0.180 0.174 0.372 Counter Mini-Splatting GaussianSpa 28.53 29.23 0.910 0.910 0.180 0.174 1.170 0.408 Flowers Mini-Splatting GaussianSpa 29.23 21.75 0.616 0.336 0.408 0.3670 Flowers Mini-Splatting GaussianSpa 21.42 21.42 0.616 0.336 0.670 0.674 Bord Amini-Splatting GaussianSpa 27.32 27.26 0.860 0.842 0.156 0.738 0.156 0.738 0.728 Kitchen Mini-Splatting GaussianSpa 31.53 31.24 0.929 0.920 0.120 0.122 1.770 0.438 0.394 Room Mini-Splatting GaussianSpa 31.59 32.04 0.929 0.920 0.200 0.193 0.193 0.193 0.193 0.193 0.194 0.290 0.193 0.394 0.394 0.420 Stump Mini-Splatting GaussianSpa 27.35 27.56 0.808 0.218 0.690 0.329 0.663 Treehill	Scene	Method	PSNR↑	SSIM↑	LPIPS↓	# G (M)↓
GaussianSpa 25.44 0.769 0.246 0.656 Bonsai 3DGS 32.19 0.950 0.180 1.250 Bonsai Mini-Splatting GaussianSpa 31.73 0.945 0.180 0.360 Counter 3DGS 29.11 0.910 0.180 1.170 Counter Mini-Splatting GaussianSpa 29.23 0.911 0.184 0.408 GaussianSpa 29.23 0.919 0.176 0.392 Flowers Mini-Splatting GaussianSpa 21.42 0.616 0.336 0.670 Garden Mini-Splatting GaussianSpa 21.75 0.610 0.329 0.674 Kitchen 3DGS 27.32 0.860 0.120 5.690 Garden Mini-Splatting GaussianSpa 27.26 0.848 0.151 0.728 Kitchen Mini-Splatting GaussianSpa 31.53 0.930 0.120 1.770 Kitchen Mini-Splatting GaussianSpa 32.04 0.929 0.122 0.438	Bicycle	3DGS	25.13	0.750	0.240	5.310
Bonsai Mini-Splatting GaussianSpa Ga		Mini-Splatting	25.21	0.760	0.247	0.646
Bonsai Mini-Splatting GaussianSpa 31.73 0.945 0.180 0.360 Counter 3DGS 29.11 0.947 0.174 0.372 Counter Mini-Splatting GaussianSpa 29.21 0.910 0.180 1.170 Counter Mini-Splatting GaussianSpa 29.23 0.911 0.184 0.408 Flowers Mini-Splatting GaussianSpa 21.37 0.590 0.360 3.470 Flowers Mini-Splatting GaussianSpa 21.42 0.616 0.336 0.670 Garden Mini-Splatting GaussianSpa 27.32 0.860 0.120 5.690 Garden Mini-Splatting GaussianSpa 27.26 0.848 0.151 0.728 Kitchen Mini-Splatting GaussianSpa 31.24 0.929 0.122 0.438 Room Mini-Splatting GaussianSpa 31.44 0.929 0.122 0.438 Room Mini-Splatting GaussianSpa 32.04 0.933 0.188 0.355 Stump Mini-Splatting GaussianSpa 27.56 </td <td>GaussianSpa</td> <td>25.44</td> <td>0.769</td> <td>0.246</td> <td>0.656</td>		GaussianSpa	25.44	0.769	0.246	0.656
GaussianSpa 32.40 0.947 0.174 0.372 Counter 3DGS 29.11 0.910 0.180 1.170 Counter Mini-Splatting GaussianSpa 29.23 0.911 0.184 0.408 GaussianSpa 29.23 0.919 0.176 0.392 Flowers Mini-Splatting GaussianSpa 21.42 0.616 0.336 0.670 Garden Mini-Splatting GaussianSpa 21.75 0.610 0.329 0.674 Kitchen Mini-Splatting GaussianSpa 27.26 0.860 0.120 5.690 Kitchen Mini-Splatting GaussianSpa 31.53 0.930 0.120 1.770 Kitchen Mini-Splatting GaussianSpa 32.03 0.934 0.117 0.423 Room Mini-Splatting GaussianSpa 32.04 0.929 0.122 0.438 Stump Mini-Splatting GaussianSpa 32.04 0.933 0.188 0.355 Stump Mini-Splatting GaussianSpa 27.56 0.808 0.218		3DGS	32.19	0.950	0.180	1.250
Counter 3DGS Mini-Splatting GaussianSpa 29.11 29.23 0.910 0.919 0.180 0.184 0.408 0.408 0.392 Flowers 3DGS Mini-Splatting GaussianSpa 21.37 21.42 0.590 0.616 0.360 0.336 3.470 0.670 Garden Mini-Splatting GaussianSpa 21.42 21.75 0.616 0.336 0.670 0.674 Barden Mini-Splatting GaussianSpa 27.32 27.26 0.860 0.842 0.156 0.738 0.151 0.738 0.728 Barden Mini-Splatting GaussianSpa 31.53 31.53 0.930 0.930 0.120 0.122 1.770 0.423 Barden Mini-Splatting GaussianSpa 31.24 32.03 0.930 0.934 0.117 0.423 0.438 0.317 Barden Mini-Splatting GaussianSpa 31.44 32.04 0.929 0.193 0.193 0.193 0.198 0.394 0.355 Stump Mini-Splatting GaussianSpa 27.35 27.35 0.803 27.56 0.808 0.218 0.690 0.442 0.690 Treehill Mini-Splatting GaussianSpa 22.61 22.69 0.652 0.332 0.663 0.329 0.637 0.663 0.329 0.637 Average Mini-Splatting Mini-Splatting GaussianSpa 27.45 22.94 0.660 0.821 0.219 0.559 0.219 0.559	Bonsai	Mini-Splatting	31.73	0.945		0.360
Counter Mini-Splatting GaussianSpa 28.53 29.23 0.911 0.919 0.184 0.176 0.408 0.392 Body Elements 3DGS 21.37 21.42 0.590 0.616 0.336 0.670 3.470 Body Elements Mini-Splatting GaussianSpa 21.42 21.75 0.616 0.329 0.674 Body Elements 3DGS 0.674 21.75 0.610 0.329 0.674 0.674 Body Elements 3DGS 0.422 0.600 0.120 0.674 Body Elements 3DGS 0.442 0.156 0.738 0.738 0.151 0.728 Body Elements 3DGS 0.438 31.53 0.930 0.120 0.122 0.438 0.438 Body Elements 3DGS 0.438 31.54 0.929 0.122 0.200 0.438 0.394 Boom Mini-Splatting GaussianSpa 31.44 0.929 0.193 0.193 0.394 0.117 0.423 0.394 Stump Mini-Splatting GaussianSpa 26.73 27.35 0.803 0.219 0.240 0.420 0.803 0.218 0.690 0.717 0.600 Treehill Mini-Splatting GaussianSpa 22.61 22.69 0.652 0.332 0.663 0.329 0.663 0.329 0.637 0.663 0.329 0.637 Average Mini-Splatting Mini-Splatting 0.7.40 0.821 0.219 0.559 0.219 0.219 0.559		GaussianSpa	32.40	0.947	0.174	0.372
GaussianSpa 29.23 0.919 0.176 0.392 Body Flowers 3DGS 21.37 0.590 0.360 3.470 Body Flowers Mini-Splatting GaussianSpa 21.42 0.616 0.336 0.670 Body GaussianSpa 21.75 0.610 0.329 0.674 Body GaussianSpa 27.32 0.860 0.120 5.690 Body GaussianSpa 27.26 0.848 0.151 0.728 Body GaussianSpa 31.53 0.930 0.120 1.770 Kitchen Mini-Splatting GaussianSpa 31.24 0.929 0.122 0.438 Boom Mini-Splatting GaussianSpa 31.44 0.929 0.120 1.500 Boom GaussianSpa 32.04 0.933 0.188 0.355 Boom Mini-Splatting GaussianSpa 27.35 0.803 0.219 0.717 Boom GaussianSpa 27.56 0.808 0.218 0.690 Treehill Mini-Splatting GaussianSpa 22.61 0.640 0.350 3.420 T		3DGS	29.11	0.910	0.180	1.170
Stump Mini-Splatting GaussianSpa Gau	Counter	Mini-Splatting	28.53	0.911	0.184	0.408
Flowers Mini-Splatting GaussianSpa 21.42 0.616 0.336 0.670 GaussianSpa 21.75 0.610 0.329 0.674 Garden Mini-Splatting GaussianSpa 27.32 0.860 0.120 5.690 Garden Mini-Splatting GaussianSpa 27.26 0.848 0.151 0.728 Kitchen Mini-Splatting GaussianSpa 31.53 0.930 0.120 1.770 Kitchen Mini-Splatting GaussianSpa 32.03 0.934 0.117 0.423 Room Mini-Splatting GaussianSpa 31.44 0.929 0.193 0.394 Stump Mini-Splatting GaussianSpa 32.04 0.933 0.188 0.355 Stump Mini-Splatting GaussianSpa 27.35 0.803 0.219 0.717 GaussianSpa 27.56 0.808 0.218 0.690 Treehill Mini-Splatting GaussianSpa 22.61 0.640 0.350 3.420 Treehill Mini-Splatting GaussianSpa 22.94 0.660		GaussianSpa	29.23	0.919	0.176	0.392
GaussianSpa 21.75 0.610 0.329 0.674 Garden 3DGS 27.32 0.860 0.120 5.690 Garden Mini-Splatting 26.99 0.842 0.156 0.738 GaussianSpa 27.26 0.848 0.151 0.728 Kitchen Mini-Splatting 31.53 0.930 0.120 1.770 Kitchen Mini-Splatting 31.24 0.929 0.122 0.438 GaussianSpa 32.03 0.934 0.117 0.423 Room Mini-Splatting 31.44 0.929 0.193 0.394 GaussianSpa 32.04 0.933 0.188 0.355 Stump Mini-Splatting 27.35 0.803 0.219 0.717 GaussianSpa 27.56 0.808 0.218 0.690 Treehill Mini-Splatting 22.69 0.652 0.332 0.663 GaussianSpa 22.94 0.660 0.329 0.637 Average <t< td=""><td></td><td>3DGS</td><td>21.37</td><td>0.590</td><td>0.360</td><td>3.470</td></t<>		3DGS	21.37	0.590	0.360	3.470
Garden Mini-Splatting GaussianSpa 27.32 (0.860) 0.120 (0.156) 5.690 (0.738) Kitchen 3DGS (31.53) 0.930 (0.151) 0.728 Kitchen Mini-Splatting GaussianSpa 31.24 (0.929) 0.122 (0.438) Room Mini-Splatting GaussianSpa 32.03 (0.934) 0.117 (0.423) Room Mini-Splatting GaussianSpa 31.44 (0.929) 0.193 (0.394) Stump Mini-Splatting GaussianSpa 32.04 (0.933) 0.188 (0.355) Stump Mini-Splatting GaussianSpa 27.35 (0.803) 0.219 (0.717) GaussianSpa 27.56 (0.808) 0.218 (0.690) Treehill Mini-Splatting GaussianSpa 22.61 (0.640) 0.350 (0.332) 0.663 Treehill Mini-Splatting GaussianSpa 22.94 (0.660) 0.329 (0.637) 0.637 Average Mini-Splatting Mini-Splatting (27.40) 0.821 (0.219) 0.559	Flowers	Mini-Splatting	21.42	0.616	0.336	0.670
Garden Mini-Splatting GaussianSpa 26.99 27.26 0.842 0.848 0.151 0.728 0.738 0.728 Sitchen 3DGS Mini-Splatting GaussianSpa 31.53 31.24 0.930 0.929 0.120 0.122 0.438 0.438 Room 3DGS Mini-Splatting GaussianSpa 31.59 31.44 0.929 0.920 0.200 0.200 1.500 0.394 Stump Mini-Splatting GaussianSpa 32.04 0.933 0.188 0.355 Stump Mini-Splatting GaussianSpa 27.35 27.56 0.808 0.218 0.219 0.690 Treehill Mini-Splatting GaussianSpa 22.61 22.69 0.652 0.652 0.332 0.663 0.329 0.637 Average Mini-Splatting Mini-Splatting 27.45 27.40 0.821 0.821 0.219 0.219 0.559		GaussianSpa	21.75	0.610	0.329	0.674
GaussianSpa 27.26 0.848 0.151 0.728 Kitchen 3DGS 31.53 0.930 0.120 1.770 Kitchen Mini-Splatting GaussianSpa 31.24 0.929 0.122 0.438 Room JOGS 31.59 0.920 0.200 1.500 Room Mini-Splatting GaussianSpa 31.44 0.929 0.193 0.394 Stump JOGS 26.73 0.770 0.240 4.420 Stump Mini-Splatting GaussianSpa 27.35 0.803 0.219 0.717 GaussianSpa 27.56 0.808 0.218 0.690 Treehill Mini-Splatting GaussianSpa 22.61 0.640 0.350 3.420 Treehill Mini-Splatting GaussianSpa 22.94 0.660 0.329 0.637 Average Mini-Splatting Mini-Splatting 27.45 0.810 0.220 3.110 Average Mini-Splatting 27.40 0.821 0.219 0.559		3DGS	27.32	0.860	0.120	5.690
Kitchen 3DGS Mini-Splatting GaussianSpa 31.53 31.24 32.03 0.930 0.929 0.122 0.120 0.438 0.117 1.770 0.438 0.423 Room 3DGS Mini-Splatting GaussianSpa 31.59 31.44 0.920 0.200 0.200 1.500 0.394 0.394 0.394 0.394 0.355 Stump 3DGS Mini-Splatting GaussianSpa 26.73 27.35 0.770 0.240 0.808 0.219 0.717 0.240 4.420 0.717 0.717 Treehill Mini-Splatting GaussianSpa 22.61 22.69 0.652 0.640 0.350 0.332 0.663 3.420 0.667 Treehill Mini-Splatting GaussianSpa 22.94 0.660 0.329 0.637 0.637 0.220 3.110 Average Mini-Splatting Mini-Splatting 27.40 0.821 0.219 0.219 0.259 0.559	Garden	Mini-Splatting	26.99	0.842	0.156	0.738
Kitchen Mini-Splatting GaussianSpa 31.24 32.03 0.929 0.934 0.122 0.117 0.423 Room 3DGS Mini-Splatting GaussianSpa 31.59 31.44 0.929 0.929 0.193 0.193 0.394 0.394 Stump 3DGS Mini-Splatting GaussianSpa 26.73 27.35 0.770 0.803 0.219 0.219 0.717 0.717 GaussianSpa 27.36 27.36 0.808 0.218 0.690 Treehill Mini-Splatting GaussianSpa 22.61 22.69 22.69 0.652 0.332 0.663 0.329 0.637 Average Mini-Splatting Mini-Splatting 27.45 27.40 0.810 0.821 0.219 0.220 0.559		GaussianSpa	27.26	0.848	0.151	0.728
GaussianSpa 32.03 0.934 0.117 0.423 Room 3DGS 31.59 0.920 0.200 1.500 Mini-Splatting 31.44 0.929 0.193 0.394 GaussianSpa 32.04 0.933 0.188 0.355 Stump Mini-Splatting 27.35 0.803 0.219 0.717 GaussianSpa 27.56 0.808 0.218 0.690 Treehill Mini-Splatting 22.69 0.652 0.332 0.663 GaussianSpa 22.94 0.660 0.329 0.637 Average Mini-Splatting 27.45 0.810 0.220 3.110 Average Mini-Splatting 27.40 0.821 0.219 0.559		3DGS	31.53	0.930	0.120	1.770
Room Mini-Splatting GaussianSpa 31.59 (31.44) 0.920 (0.200) 1.500 (0.394) Stump Mini-Splatting GaussianSpa 32.04 (0.933) 0.188 (0.355) Stump Mini-Splatting GaussianSpa 27.35 (0.803) 0.219 (0.717) GaussianSpa 27.56 (0.808) 0.218 (0.690) Treehill Mini-Splatting GaussianSpa 22.61 (0.640) 0.350 (0.332) 0.663 (0.637) GaussianSpa 22.94 (0.660) 0.329 (0.637) 0.637 Average Mini-Splatting Mini-Splatting (27.40) 0.821 (0.219) 0.559	Kitchen	Mini-Splatting	31.24	0.929	0.122	0.438
Room Mini-Splatting GaussianSpa 31.44 32.04 0.929 0.933 0.193 0.188 0.394 0.355 Stump 3DGS Mini-Splatting GaussianSpa 26.73 27.35 0.770 0.803 0.219 0.219 0.717 0.717 Treehill 3DGS Mini-Splatting GaussianSpa 22.61 22.69 0.640 0.652 0.350 0.322 3.420 0.663 Treehill Mini-Splatting GaussianSpa 22.94 22.94 0.660 0.329 0.637 Average Mini-Splatting Mini-Splatting 27.40 27.40 0.821 0.821 0.219 0.219 0.559		GaussianSpa	32.03	0.934	0.117	0.423
GaussianSpa 32.04 0.933 0.188 0.355 Stump 3DGS 26.73 0.770 0.240 4.420 Mini-Splatting 27.35 0.803 0.219 0.717 GaussianSpa 27.56 0.808 0.218 0.690 Treehill Mini-Splatting 22.61 0.640 0.350 3.420 GaussianSpa 22.94 0.660 0.329 0.637 Average Mini-Splatting 27.40 0.821 0.219 0.559		3DGS	31.59	0.920	0.200	1.500
Stump 3DGS Mini-Splatting GaussianSpa 26.73 27.35 0.770 0.803 0.240 0.219 4.420 0.717 3DGS 27.35 0.803 0.219 0.717 3DGS 27.56 0.808 0.218 0.690 Treehill Mini-Splatting GaussianSpa 22.61 0.640 0.350 3.420 GaussianSpa 22.94 0.660 0.329 0.637 Average Mini-Splatting 27.40 0.821 0.219 0.559	Room	Mini-Splatting	31.44	0.929	0.193	0.394
Stump Mini-Splatting GaussianSpa 27.35 27.56 0.803 0.808 0.219 0.218 0.717 0.690 Treehill 3DGS 22.61 0.640 0.350 3.420 Treehill Mini-Splatting GaussianSpa 22.69 0.652 0.332 0.663 GaussianSpa 22.94 0.660 0.329 0.637 Average Mini-Splatting 27.45 0.810 0.220 3.110 Average Mini-Splatting 27.40 0.821 0.219 0.559		GaussianSpa	32.04	0.933	0.188	0.355
GaussianSpa 27.56 0.808 0.218 0.690 Treehill 3DGS 22.61 0.640 0.350 3.420 Mini-Splatting 22.69 0.652 0.332 0.663 GaussianSpa 22.94 0.660 0.329 0.637 3DGS 27.45 0.810 0.220 3.110 Average Mini-Splatting 27.40 0.821 0.219 0.559	Stump	3DGS	26.73	0.770	0.240	4.420
Treehill Mini-Splatting GaussianSpa 22.61 22.94 0.640 0.350 0.350 0.663 3.420 0.663 0.663 3DGS 22.69 0.652 0.332 0.663 0.329 0.637 3DGS 27.45 0.810 0.220 3.110 Average Mini-Splatting 27.40 0.821 0.219 0.559		Mini-Splatting	27.35	0.803	0.219	0.717
Treehill Mini-Splatting GaussianSpa 22.69 22.94 0.652 0.660 0.332 0.332 0.663 0.637 3DGS 27.45 0.810 0.220 3.110 Average Mini-Splatting 27.40 0.821 0.219 0.559		GaussianSpa	27.56	0.808	0.218	0.690
GaussianSpa 22.94 0.660 0.329 0.637 3DGS 27.45 0.810 0.220 3.110 Average Mini-Splatting 27.40 0.821 0.219 0.559	Treehill	3DGS	22.61	0.640	0.350	3.420
3DGS 27.45 0.810 0.220 3.110 Average Mini-Splatting 27.40 0.821 0.219 0.559		Mini-Splatting	22.69	0.652	0.332	0.663
Average Mini-Splatting 27.40 0.821 0.219 0.559		GaussianSpa	22.94	0.660	0.329	0.637
	Average					
GaussianSpa 27.85 0.825 0.214 0.547						
		GaussianSpa	27.85	0.825	0.214	0.547

Table 3. MiP-NeRF360 per scene results. 3DGS results are reported from [19]. Mini-Splatting [17] results are replicated using official code.

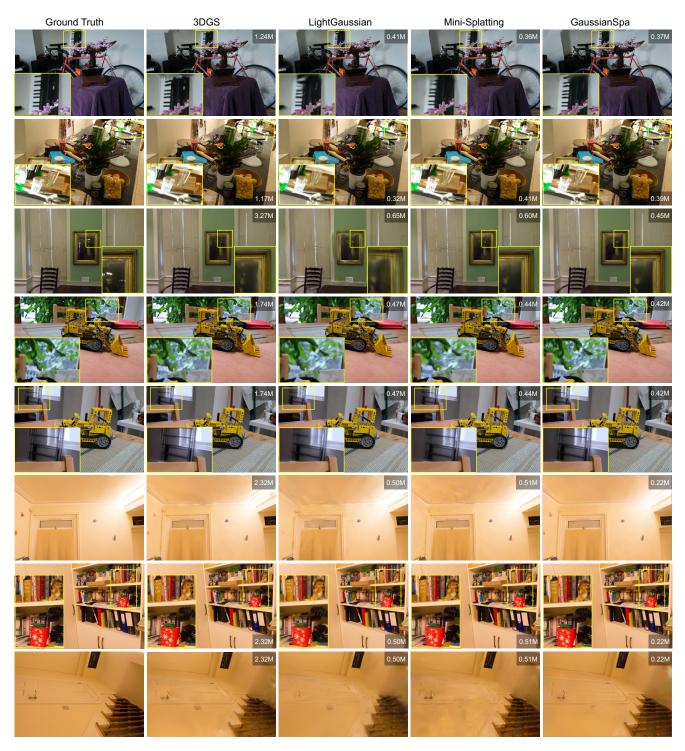


Figure 10. Additional visual comparison on more scenes. The numbers of remaining Gaussians in millions are displayed.



Figure 11. (Continue) Additional visual comparison on more scenes. The numbers of remaining Gaussians in millions are displayed.



Figure 12. Additional visualized Gaussian ellipsoids. The numbers of remaining Gaussians in millions are displayed.

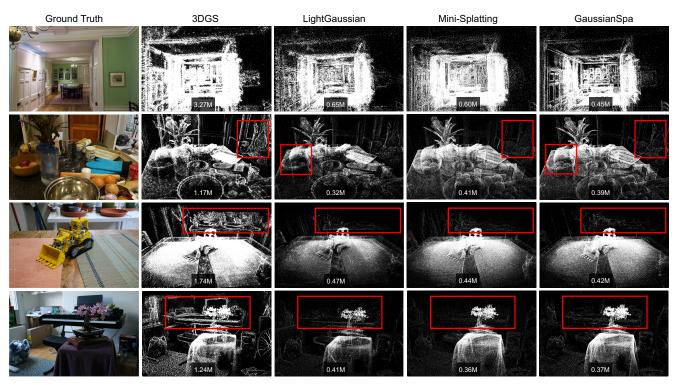


Figure 13. Additional visualized point clouds. The numbers of remaining Gaussians in millions are displayed.

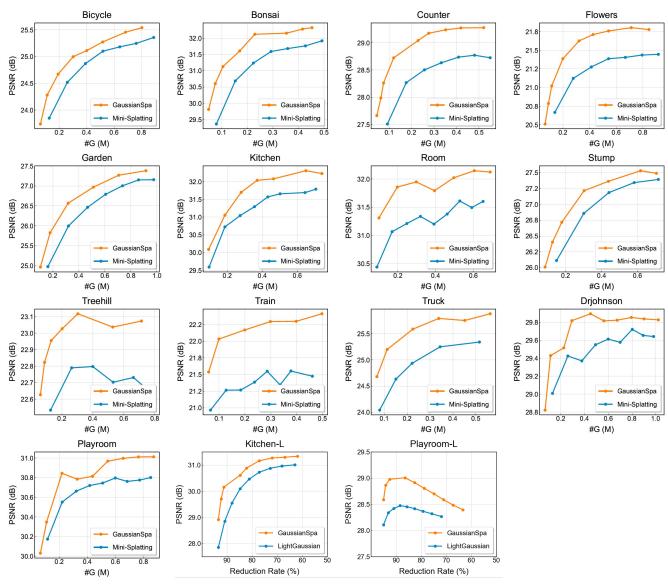


Figure 14. The first 13 sub-figures: Quality-#G (the number of Gaussians in millions) curves comparing GaussianSpa with Mini-Splatting [17] on multiple scenes. Our GaussianSpa consistently outperforms Mini-Splatting [17] with the same #G. The last two sub-figures: Quality-Reduction Rate curves comparing GaussianSpa with LightGaussian [16] on the Kitchen and Playroom scenes.

Scene	Method	PSNR↑	SSIM↑	LPIPS↓	$\#\:G\:(M){\downarrow}$
Train	3DGS	21.94	0.810	0.200	1.110
	Mini-Splatting	21.78	0.805	0.231	0.287
	GaussianSpa	22.17	0.815	0.228	0.199
Truck	3DGS	25.31	0.880	0.150	2.540
	Mini-Splatting	25.13	0.878	0.141	0.352
	GaussianSpa	25.79	0.888	0.132	0.338
Average	3DGS	23.63	0.850	0.180	1.830
	Mini-Splatting	23.45	0.841	0.186	0.319
	GaussianSpa	23.98	0.852	0.180	0.269

Scene	Method	PSNR↑	SSIM↑	LPIPS↓	# G (M)↓
Drjohnson	3DGS	28.77	0.900	0.250	3.260
	Mini-Splatting	29.37	0.904	0.261	0.377
	GaussianSpa	29.89	0.913	0.243	0.450
	GaussianSpa	29.82	0.909	0.254	0.293
Playroom	3DGS	30.07	0.900	0.250	2.290
	Mini-Splatting	30.72	0.914	0.248	0.417
	GaussianSpa	30.84	0.916	0.254	0.219
	GaussianSpa	30.84	0.916	0.254	0.219
Average	3DGS	29.42	0.900	0.250	2.780
	Mini-Splatting	30.05	0.909	0.254	0.397
	GaussianSpa	30.37	0.914	0.249	0.335
	GaussianSpa	30.33	0.912	0.254	0.256

Table 4. Tanks&Temples per scene results.

Table 5. Deep Blending per scene results.