Supplemental Material for Learning View-Dependent Splatting Kernels

A Detailed Quantitative Results

Table 1. Per-scene reconstruction quality of our approach and state-of-the-art techniques (3DGS-MCMC [Kheradmand et al. 2024], SSS [Zhu et al. 2025] and DBS [Liu et al. 2025]) on 4 standard datasets: Mip-NeRF360 [Barron et al. 2022], Tanks & Temples [Knapitsch et al. 2017], Deep Blending [Hedman et al. 2018] and NeRF Synthetic [Mildenhall et al. 2020]. Baseline results are obtained from the original papers whenever available; otherwise, we run the official implementation and list the results in *italics*. SH = spherical harmonics, SB = spherical Beta, T & T = Tanks & Temples, DB = Deep Blending.

	Scenes	3DGS-MCMC	SSS	DBS	Ours (3D+SH)	Ours (3D+SB)
Mip-NeRF 360	bicycle	26.15 / 0.81 / 0.18	25.68 / 0.798 / 0.173	26.04 / 0.804 / 0.169	26.00 / 0.797 / 0.187	25.95 / 0.795 / 0.200
	flowers	22.12 / 0.642 / 0.31	*21.77 / 0.629 / 0.302*	22.44 / 0.650 / 0.308	22.47 / 0.644 / 0.299	22.34 / 0.641 / 0.307
	garden	28.16 / 0.89 / 0.10	28.09 / 0.882 / 0.009	28.15 / 0.882 / 0.096	28.07 / 0.878 / 0.096	28.09 / 0.877 / 0.100
	stump	27.80 / 0.82 / 0.19	27.17 / 0.813 / 0.174	27.56 / 0.815 / 0.184	27.80 / 0.813 / 0.186	27.62 / 0.807 / 0.193
	treehill	23.31 / 0.66 / 0.29	*23.19 / 0.661 / 0.300*	23.49 / 0.676 / 0.293	23.54 / 0.674 / 0.317	23.60 / 0.671 / 0.326
	room	32.48 / 0.94 / 0.25	32.57 / 0.938 / 0.167	32.83 / 0.941 / 0.168	33.58 / 0.943 / 0.165	33.59 / 0.943 / 0.167
	counter	29.51 / 0.92 / 0.22	29.87 / 0.926 / 0.156	30.36 / 0.930 / 0.154	30.51 / 0.931 / 0.154	30.74 / 0.931 / 0.152
	kitchen	32.27 / 0.94 / 0.14	32.43 / 0.939 / 0.104	32.61 / 0.939 / 0.110	32.61 / 0.939 / 0.108	32.79 / 0.939 / 0.108
	bonsai	32.88 / 0.95 / 0.22	33.50 / 0.956 / 0.151	33.90 / 0.957 / 0.156	34.05 / 0.959 / 0.153	34.69 / 0.959 / 0.152
	average	28.29 / 0.84 / 0.21	*28.25 / 0.838 / 0.171*	28.60 / 0.844 / 0.182	28.73 / 0.842 / 0.185	28.82 / 0.840 / 0.189
NeRF Synthetic	chair	36.51 / 0.99 / 0.02	*36.64 / 0.990 / 0.010*	36.74 / 0.990 / 0.010	36.88 / 0.990 / 0.009	36.62 / 0.990 / 0.009
	drums	26.29 / 0.95 / 0.04	*26.29 / 0.955 / 0.037*	26.78 / 0.958 / 0.033	26.68 / 0.957 / 0.033	26.85 / 0.958 / 0.032
	ficus	35.07 / 0.99 / 0.01	*36.60 / 0.989 / 0.011*	36.75 / 0.990 / 0.010	37.05 / 0.990 / 0.009	37.00 / 0.990 / 0.009
	hotdog	37.82 / 0.99 / 0.02	*38.55 / 0.987 / 0.018*	38.85 / 0.988 / 0.015	38.77 / 0.988 / 0.015	38.45 / 0.987 / 0.015
	lego	36.01 / 0.98 / 0.02	*36.74 / 0.985 / 0.015*	37.12 / 0.985 / 0.014	36.99 / 0.985 / 0.014	37.10 / 0.985 / 0.014
	materials	30.59 / 0.96 / 0.04	*30.78 / 0.964 / 0.034*	31.12 / 0.966 / 0.032	31.33 / 0.968 / 0.030	31.25 / 0.967 / 0.028
	mic	37.29 / 0.99 / 0.01	*37.02 / 0.993 / 0.006*	37.66 / 0.994 / 0.005	37.76 / 0.994 / 0.005	37.26 / 0.994 / 0.005
	ship	30.82 / 0.91 / 0.12	*31.71 / 0.905 / 0.101*	32.13 / 0.910 / 0.103	32.32 / 0.913 / 0.098	32.10 / 0.912 / 0.101
	average	33.80 / 0.97 / 0.04	*34.29 / 0.971 / 0.029*	34.64 / 0.973 / 0.028	34.72 / 0.973 / 0.027	34.58 / 0.973 / 0.027
T & T	truck	26.11 / 0.89 / 0.14	26.41 / 0.897 / 0.109	26.44 / 0.897 / 0.110	26.94 / 0.902 / 0.105	26.97 / 0.902 / 0.107
	train	22.47 / 0.83 / 0.24	23.32 / 0.850 / 0.166	23.13 / 0.839 / 0.185	23.89 / 0.851 / 0.178	23.73 / 0.847 / 0.183
	average	24.29 / 0.86 / 0.19	24.87 / 0.873 / 0.138	24.79 / 0.868 / 0.147	25.42 / 0.877 / 0.141	25.35 / 0.874 / 0.145
DB	drjohnson	29.00 / 0.89 / 0.33	29.66 / 0.905 / 0.249	29.39 / 0.908 / 0.240	29.85 / 0.911 / 0.234	30.00 / 0.910 / 0.235
	playroom	30.33 / 0.90 / 0.31	30.47 / 0.909 / 0.245	30.82 / 0.912 / 0.240	31.20 / 0.915 / 0.231	31.08 / 0.915 / 0.240
	average	29.67 / 0.90 / 0.32	30.07 / 0.907 / 0.247	30.10 / 0.910 / 0.240	30.52 / 0.913 / 0.233	30.54 / 0.913 / 0.237

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