

Supplementary Material

In this supplementary section, we provide additional qualitative results of the six benchmarked methods (Instant-NGP [36], NERFstudio [47], zip-Nerf [3], Gaussian Splatting [19], mip-splatting [52], 3DGS-mcmc [21] in figures 8 and 9) and detailed individual class-level quantitative results (through Tables 9 to 17) of the six SOTA methods, as well as an ablation study. Figures 10 and 11 show the reconstruction of a long fruit scene of apples using Mip-Splatting [52] and Instant-NGP [36].



Ground Truth 12.5% 25% 50%

(a) Fruit.



Ground Truth 12.5% 25% 50%

(b) Vegetable.



Ground Truth 12.5% 25% 50%

(c).

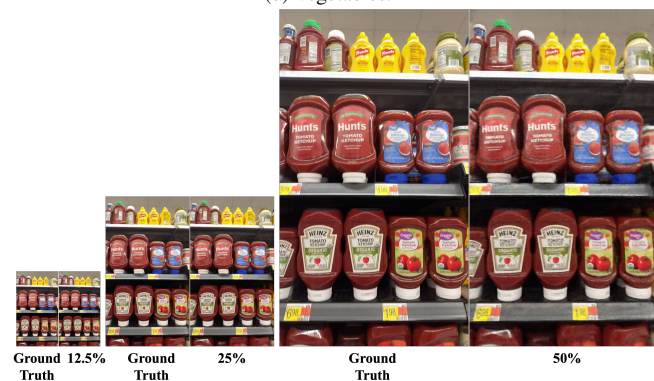
Figure 6. Qualitative reconstruction results on three categories from GroceryWild500: (a) fruits, (b) vegetables, and (c) packaged goods. For each category, we compare ground truth (GT) images against InstantNGP reconstructions trained with subsets of the available views (12.5%, 25%, and 50% of the original images).



(a) Fruits.



(b) Vegetables.



(c) Package.

Figure 7. Qualitative reconstruction results on three categories from GroceryWild500: (a) fruits, (b) vegetables, and (c) packaged goods. For each category, we compare ground truth (GT) images against InstantNGP reconstructions trained on inputs with different image resolutions (12.5%, 25%, and 50% of the original 1080×1920 resolution).



Figure 8. Qualitative comparison of novel view synthesis in a grocery store scene. Columns show (from left to right): Ground Truth (GT), NeRF Studio [47] reconstruction, error map between GT and NeRF Studio, Zip-NeRF [3] reconstruction, error map between GT and Zip-NeRF, Instant NGP [36] reconstruction, and error map between GT and Instant NGP. Rows correspond to different viewpoints. Error maps highlight structural and texture discrepancies between predicted and reference images.

Table 9. Reconstruction quality (PSNR \uparrow / SSIM \uparrow / LPIPS \downarrow) across Packages classes for six different methods.

Classes	NeRFStudio [47]			Instant-NGP [36]			zip-NeRF [3]			Gaussian Splatting [19]			mip-splatting [52]			3DGS-mcmc [21]		
	PSNR	SSIM	LPIPS	PSNR	SSIM	LPIPS	PSNR	SSIM	LPIPS	PSNR	SSIM	LPIPS	PSNR	SSIM	LPIPS	PSNR	SSIM	LPIPS
Alfredo	18.71	0.635	0.4121	16.62	0.433	0.6555	24.34	0.797	0.2580	20.81	0.742	0.2999	20.80	0.743	0.2990	12.11	0.390	0.7301
AppleJuice	17.90	0.621	0.4788	20.76	0.704	0.4456	20.53	0.709	0.3807	16.66	0.617	0.4658	16.64	0.616	0.4648	21.26	0.719	0.3769
BBQSauce	17.70	0.602	0.4717	13.07	0.387	0.7268	20.50	0.714	0.3628	19.23	0.679	0.3375	19.41	0.683	0.3339	16.04	0.571	0.6814
Bagels	19.64	0.632	0.3641	23.77	0.753	0.3366	25.03	0.799	0.2514	21.15	0.716	0.2895	21.16	0.717	0.2905	20.14	0.676	0.4412
Beans	14.12	0.464	0.6551	16.74	0.555	0.6575	19.66	0.673	0.4003	13.17	0.510	0.6364	13.31	0.511	0.6304	21.77	0.741	0.3659
Bread	18.32	0.616	0.4238	21.88	0.692	0.4315	24.52	0.783	0.2768	21.75	0.748	0.2590	20.44	0.710	0.3191	17.08	0.578	0.5389
Buns	19.31	0.635	0.4065	24.33	0.762	0.3624	25.32	0.819	0.2337	18.62	0.628	0.3752	21.66	0.746	0.2592	20.52	0.712	0.3949
Can	17.32	0.559	0.4919	17.01	0.531	0.5764	23.21	0.772	0.2820	20.94	0.742	0.2852	19.47	0.675	0.3314	22.34	0.775	0.3209
Candy	18.66	0.625	0.4222	22.90	0.733	0.3723	22.57	0.761	0.3167	21.89	0.774	0.2667	20.97	0.742	0.2852	19.41	0.698	0.4666
Cereal	17.33	0.610	0.4702	24.29	0.768	0.3320	25.21	0.830	0.2164	17.78	0.651	0.3921	22.22	0.778	0.2572	18.92	0.654	0.4657
Chilli	17.35	0.599	0.4736	21.57	0.713	0.4230	19.73	0.672	0.3852	19.26	0.675	0.3332	17.88	0.653	0.3865	09.99	0.363	0.8566
Chips	17.33	0.566	0.4585	19.71	0.634	0.4808	22.55	0.757	0.2881	19.28	0.678	0.3329	19.26	0.675	0.3323	19.01	0.675	0.4610
ChipsSalsa	18.69	0.632	0.4210	09.77	0.270	0.8968	18.96	0.674	0.4245	20.71	0.718	0.3151	22.16	0.779	0.2581	21.01	0.753	0.3931
Coffee	18.36	0.630	0.4610	19.47	0.657	0.5223	23.14	0.753	0.3528	19.70	0.722	0.3151	21.81	0.771	0.2624	18.06	0.644	0.4620
Dressings	18.65	0.653	0.4147	23.48	0.768	0.3569	23.59	0.798	0.2663	17.45	0.538	0.4825	19.80	0.724	0.3110	20.90	0.717	0.3899
Drinks	17.42	0.610	0.5191	19.96	0.575	0.5169	27.14	0.849	0.1857	20.59	0.716	0.3071	22.94	0.800	0.2049	23.48	0.797	0.3205
EnergyDrinks	18.60	0.603	0.3971	23.46	0.738	0.3721	25.93	0.820	0.2274	23.64	0.811	0.2212	20.70	0.718	0.3032	19.89	0.697	0.4080
Flour	20.52	0.684	0.3602	23.48	0.770	0.3875	26.88	0.848	0.2098	19.14	0.674	0.3384	23.63	0.810	0.2219	16.17	0.604	0.6232
FruitCans	17.93	0.598	0.4234	22.85	0.738	0.3570	26.62	0.831	0.2081	17.44	0.611	0.4348	18.85	0.669	0.3420	16.85	0.527	0.5378
Gatorade	16.38	0.456	0.6144	17.85	0.550	0.6175	21.73	0.720	0.3549	18.87	0.696	0.4007	17.50	0.613	0.4306	23.46	0.778	0.2850
GranolaBars	16.71	0.567	0.5201	18.41	0.655	0.5370	20.94	0.702	0.3762	24.02	0.813	0.1824	21.17	0.754	0.2459	23.58	0.821	0.2730
Greens	20.81	0.657	0.3267	21.64	0.683	0.4393	29.06	0.876	0.1510	23.58	0.835	0.2022	23.93	0.814	0.1839	19.81	0.687	0.4091
Honey	19.12	0.658	0.3693	24.69	0.788	0.3342	27.27	0.865	0.1836	22.36	0.777	0.2162	23.58	0.836	0.1995	18.82	0.644	0.4664
Jam	19.14	0.642	0.3662	20.89	0.596	0.5047	23.46	0.777	0.2548	18.52	0.659	0.3925	22.30	0.777	0.2164	19.10	0.692	0.4485
Juices	17.28	0.577	0.4695	17.95	0.525	0.5944	24.76	0.804	0.2237	20.03	0.718	0.2992	20.03	0.704	0.2967	17.42	0.591	0.5183
Ketchup	19.46	0.673	0.3778	21.15	0.670	0.4472	18.92	0.609	0.5340	19.26	0.727	0.3216	20.09	0.719	0.2990	20.75	0.739	0.3798
Mayo	14.44	0.509	0.5941	14.95	0.446	0.7127	22.56	0.781	0.2861	23.02	0.800	0.2251	19.27	0.728	0.3214	14.64	0.554	0.6044
Nuts	18.60	0.609	0.3751	21.69	0.685	0.4298	26.24	0.844	0.1873	16.42	0.542	0.4403	23.09	0.801	0.2261	20.46	0.703	0.4004
Oil	16.65	0.557	0.5636	16.60	0.540	0.6229	19.64	0.682	0.4681	17.58	0.647	0.4270	17.57	0.603	0.3746	14.30	0.493	0.6900
OliveOil	19.86	0.686	0.4320	16.96	0.511	0.6220	21.83	0.747	0.3390	19.88	0.737	0.3089	17.66	0.648	0.4264	18.65	0.691	0.4969
PastaSauce	18.11	0.639	0.4159	22.09	0.705	0.4378	19.92	0.680	0.4122	19.42	0.717	0.3301	20.03	0.740	0.3027	20.48	0.738	0.3911
PeanutButter	18.11	0.648	0.4156	22.31	0.751	0.3717	23.54	0.794	0.2631	16.82	0.658	0.4253	19.56	0.720	0.3239	20.40	0.744	0.3871
Pickles	16.16	0.537	0.5772	20.25	0.672	0.4800	22.15	0.772	0.3191	21.54	0.763	0.2363	16.84	0.631	0.4431	18.34	0.683	0.4867
Pringles	17.31	0.608	0.4003	23.46	0.758	0.3289	20.52	0.748	0.3057	20.62	0.735	0.3001	21.63	0.763	0.2344	21.74	0.762	0.3287
Ranch	19.09	0.655	0.3932	23.63	0.770	0.3485	24.00	0.794	0.2661	16.47	0.596	0.4383	20.63	0.734	0.3010	21.51	0.755	0.3686
Salsa	15.87	0.491	0.5705	17.95	0.534	0.5880	22.69	0.751	0.3207	18.91	0.677	0.3733	16.71	0.600	0.4535	16.83	0.578	0.5537
Sauce	17.62	0.591	0.4513	21.37	0.703	0.4351	22.61	0.751	0.3064	19.88	0.646	0.3432	19.51	0.689	0.3283	18.51	0.636	0.4976
Snacks	17.69	0.543	0.4880	16.99	0.604	0.5725	27.23	0.859	0.1779	16.71	0.583	0.4288	20.01	0.652	0.3450	19.87	0.696	0.4218
Soup	16.86	0.575	0.4826	15.59	0.474	0.7040	17.38	0.603	0.4854	18.19	0.633	0.4034	16.09	0.573	0.4442	13.62	0.522	0.6924
Spices	17.74	0.576	0.4856	20.92	0.691	0.4372	19.61	0.684	0.4505	19.65	0.739	0.3318	18.05	0.632	0.4066	18.76	0.683	0.4719
Sugar	18.51	0.650	0.4508	16.76	0.511	0.6099	20.86	0.741	0.4054	24.03	0.834	0.1860	19.61	0.738	0.3344	15.12	0.557	0.5709
Syrup	21.33	0.711	0.3086	25.56	0.808	0.2790	28.04	0.875	0.1614	17.62	0.683	0.3734	24.08	0.836	0.1865	23.53	0.815	0.2620
Tea	18.93	0.684	0.3762	22.93	0.786	0.3281	28.11	0.881	0.1612	19.37	0.666	0.3198	17.60	0.682	0.3781	19.52	0.728	0.3951
Tomato	17.63	0.569	0.4372	20.32	0.608	0.4850	20.34	0.690	0.4177	17.59	0.593	0.4254	19.26	0.663	0.3237	17.59	0.572	0.5187
Tostitos	16.90	0.546	0.4829	21.22	0.688	0.4141	21.48	0.707	0.3464	17.44	0.639	0.4302	17.68	0.593	0.4237	19.11	0.645	0.5053
Vinegar	15.68	0.595	0.5768	16.18	0.485	0.6162	22.13	0.753	0.3241	18.41	0.687	0.3703	17.39	0.641	0.4308	15.50	0.604	0.6156

Table 10. Reconstruction quality (PSNR \uparrow / SSIM \uparrow / LPIPS \downarrow) across fruit classes for six different methods.

Classes	NeRFStudio [47]			Instant-NGP [36]			zip-NeRF [3]			Gaussian Splatting [19]			mip-splatting [52]			3DGS-mcmc [21]		
	PSNR	SSIM	LPIPS	PSNR	SSIM	LPIPS	PSNR	SSIM	LPIPS	PSNR	SSIM	LPIPS	PSNR	SSIM	LPIPS	PSNR	SSIM	LPIPS
Apples	22.46	0.765	0.0566	26.17	0.770	0.0532	31.06	0.899	0.0196	26.29	0.872	0.0253	26.31	0.872	0.0253	23.86	0.804	0.0532
Avocados	21.61	0.688	0.0580	27.05	0.796	0.0294	29.73	0.874	0.0202	25.08	0.831	0.0293	25.12	0.832	0.0291	24.67	0.807	0.0321
Bananas	21.56	0.744	0.0562	25.97	0.820	0.0423	30.07	0.898	0.0193	26.26	0.875	0.0242	26.33	0.876	0.0239	24.78	0.837	0.0397
Coconuts	26.39	0.817	0.0343	30.97	0.870	0.0186	34.04	0.924	0.0124	27.59	0.879	0.0198	27.70	0.880	0.0194	27.16	0.860	0.0214
Grapefruits	23.75	0.756	0.0454	29.95	0.851	0.0203	32.95	0.915	0.0130	26.55	0.887	0.0202	26.60	0.887	0.0201	26.34	0.866	0.0220
Lemons	21.76	0.699	0.0664	24.39	0.693	0.0876	30.13	0.843	0.0351	24.06	0.789	0.0756	24.42	0.778	0.0610	22.60	0.749	0.0726
Lime	22.28	0.727	0.0533	27.43	0.808	0.0274	30.01	0.872	0.0184	25.09	0.822	0.0296	25.11	0.822	0.0299	24.70	0.804	0.0318
Mangoes	23.82	0.791	0.0456	29.85	0.868	0.0207	32.94	0.915	0.0145	26.52	0.886	0.0213	26.61	0.887	0.0211	25.99	0.867	0.0243
Melons	22.20	0.720	0.0578	26.70	0.780	0.0440	30.67	0.889	0.0218	25.08	0.840	0.0317	25.15	0.842	0.0309	24.05	0.800	0.0443
MultiFruits	20.07	0.661	0.0662	22.83	0.691	0.0703	28.31	0.861	0.0250	24.21	0.811	0.0349	24.16	0.811	0.0353	21.33	0.733	0.0849
Nectarines	23.92	0.751	0.0440	28.95	0.836	0.0236	31.80	0.895	0.0160	26.11	0.848	0.0256	26.11	0.849	0.0255	25.60	0.827	0.0281
Oranges	21.79	0.738	0.0633	28.48	0.843	0.0255	30.65	0.888	0.0210	25.72	0.858	0.0270	25.73	0.859	0.0270	25.41	0.844	0.0280
Pears	23.22	0.749	0.0549	28.45	0.834	0.0346	31.54	0.888	0.0296	26.19	0.866							

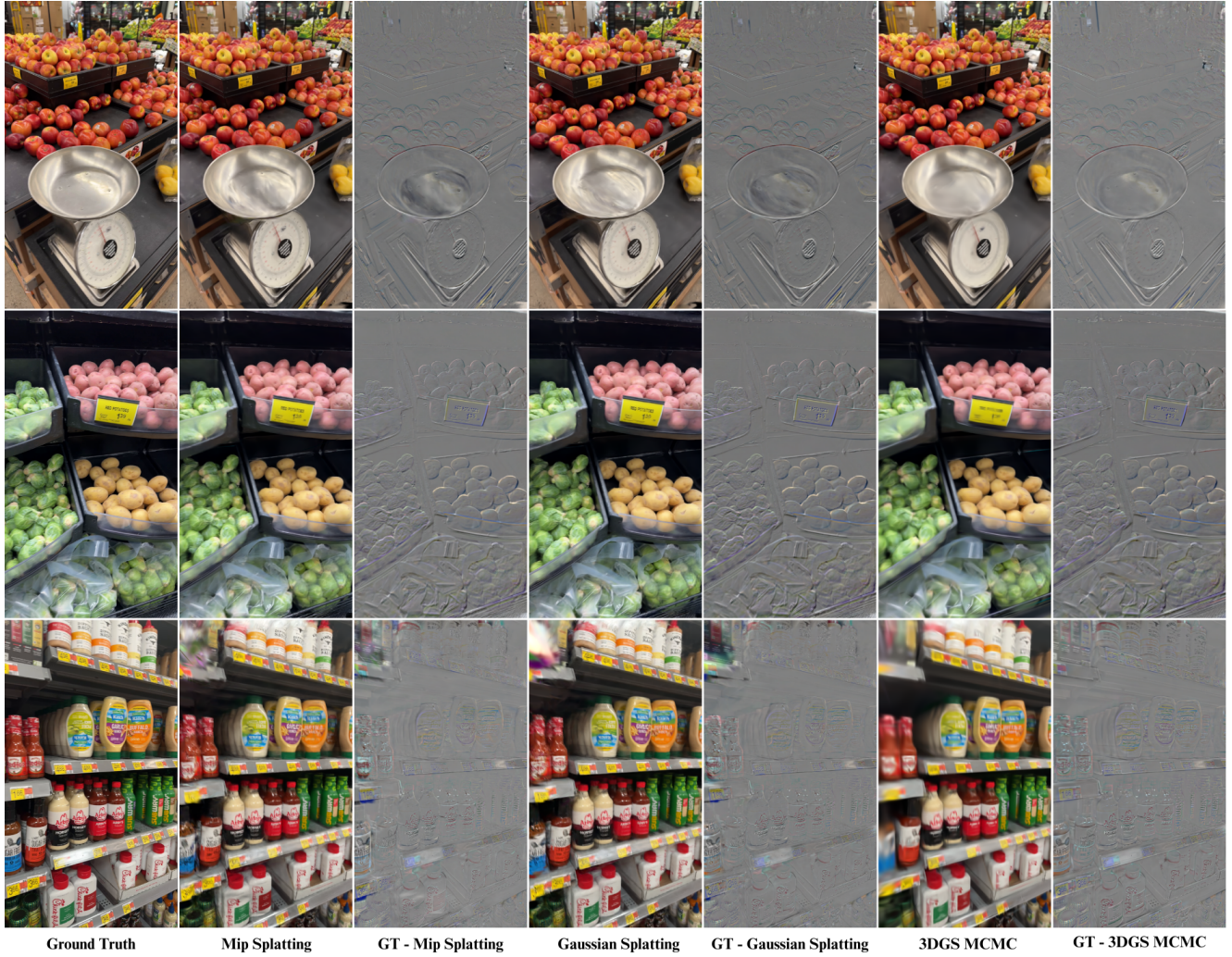


Figure 9. Comparison of novel view synthesis results for grocery store scenes using Mip Splatting [52], Gaussian Splatting [19], and 3DGS MCMC [21]. Columns show (from left to right): Ground Truth (GT), rendered output, and error maps between GT and each method. Rows present different viewpoints. Error maps highlight structural and texture discrepancies, revealing differences in reconstruction fidelity across methods.

Table 11. Reconstruction quality (PSNR \uparrow / SSIM \uparrow / LPIPS \downarrow) across vegetable classes for six different methods.

Classes	NeRFStudio [47]			Instant-NGP [36]			zip-NeRF [3]			Gaussian Splatting [19]			mip-splatting [52]			3DGS-mcmc [21]		
	PSNR	SSIM	LPIPS	PSNR	SSIM	LPIPS	PSNR	SSIM	LPIPS	PSNR	SSIM	LPIPS	PSNR	SSIM	LPIPS	PSNR	SSIM	LPIPS
Broccoli	19.52	0.528	0.4234	20.72	0.606	0.5391	28.76	0.852	0.2001	24.66	0.789	0.2140	24.65	0.790	0.2161	23.94	0.741	0.3129
Cabbages	23.77	0.747	0.2939	22.29	0.734	0.4337	32.57	0.916	0.1286	26.36	0.877	0.1577	26.32	0.876	0.1597	25.72	0.848	0.2441
Corn	19.30	0.645	0.3665	25.76	0.789	0.3240	27.13	0.847	0.2084	23.89	0.814	0.2136	23.89	0.814	0.2146	23.68	0.796	0.2931
Cucumbers	22.27	0.761	0.2993	27.39	0.838	0.2763	30.03	0.899	0.1537	24.76	0.861	0.1828	24.75	0.861	0.1840	24.32	0.840	0.2731
Garlic	24.45	0.815	0.2115	31.01	0.898	0.1756	35.51	0.950	0.0680	27.39	0.927	0.1075	27.63	0.929	0.1062	26.78	0.904	0.1646
Gourds	22.97	0.802	0.2455	30.06	0.883	0.2132	32.96	0.930	0.1086	24.46	0.885	0.1686	24.27	0.885	0.1721	24.58	0.870	0.2431
Onions	21.85	0.726	0.3129	25.79	0.760	0.3489	31.85	0.913	0.1233	25.40	0.839	0.1982	25.39	0.839	0.2003	23.31	0.780	0.3253
Peppers	21.40	0.717	0.2755	24.09	0.766	0.3429	30.18	0.899	0.1234	24.50	0.850	0.1654	24.57	0.851	0.1652	23.91	0.823	0.2460
Plantains	24.48	0.824	0.2155	30.95	0.899	0.1801	34.42	0.941	0.0921	27.44	0.908	0.1512	27.48	0.909	0.1512	26.73	0.890	0.2177
Potatoes	22.53	0.753	0.3108	28.11	0.839	0.2761	31.33	0.906	0.1431	25.69	0.863	0.1882	25.70	0.863	0.1888	25.40	0.838	0.2928
Radish	21.05	0.648	0.2732	22.80	0.736	0.3403	31.36	0.905	0.1079	24.87	0.870	0.1334	25.07	0.871	0.1329	24.23	0.828	0.2222
Tomatoes	21.87	0.738	0.2456	27.42	0.799	0.2576	31.48	0.907	0.1065	26.66	0.876	0.1370	26.71	0.877	0.1367	24.95	0.818	0.2566
Various Veggies	18.16	0.609	0.4650	18.53	0.572	0.5657	26.32	0.839	0.2702	20.32	0.748	0.3329	20.82	0.764	0.3371	19.13	0.680	0.4842

Table 12. Performance metrics (PSNR, SSIM, LPIPS) for Instant-NGP [36] on Fruits classes, evaluated using 50%, 25%, and 12.5% of the available training images (i.e., reduced numbers of input views).

Classes	Instant-NGP (50%)			Instant-NGP (25%)			Instant-NGP (12.5%)		
	PSNR	SSIM	LPIPS	PSNR	SSIM	LPIPS	PSNR	SSIM	LPIPS
Apples	25.00	0.768	0.3205	21.24	0.722	0.4000	16.54	0.587	0.5564
Avacados	25.93	0.778	0.2980	23.02	0.735	0.3425	18.75	0.632	0.4568
Bananas	24.86	0.793	0.3251	20.75	0.735	0.4029	16.56	0.610	0.5498
Coconuts	30.18	0.854	0.2371	28.79	0.857	0.2252	23.66	0.802	0.2923
GrapeFruits	26.40	0.752	0.3529	26.24	0.813	0.2788	20.31	0.717	0.3912
Lemons	26.26	0.788	0.3134	25.30	0.806	0.2694	20.13	0.708	0.3799
Lime	19.27	0.538	0.5434	22.34	0.743	0.3473	12.66	0.330	0.7231
Mangoes	28.93	0.858	0.2125	22.98	0.755	0.3567	19.56	0.667	0.4718
Melons	25.57	0.792	0.3201	21.55	0.717	0.4098	15.91	0.601	0.5891
MultiFruits	23.35	0.744	0.3555	19.24	0.655	0.4787	15.11	0.495	0.6595
Nectarines	28.30	0.834	0.2368	25.94	0.809	0.2667	20.52	0.719	0.3686
Orange	25.36	0.772	0.3389	21.37	0.711	0.4180	16.39	0.564	0.5936
Pears	28.73	0.846	0.2246	25.14	0.789	0.2954	20.15	0.706	0.4022
Pineapples	23.40	0.725	0.3600	19.30	0.626	0.4627	14.39	0.414	0.6691
Plums	24.98	0.789	0.2906	19.97	0.696	0.3460	15.14	0.585	0.6268

Table 13. Performance metrics (PSNR, SSIM, LPIPS) for Instant-NGP [36] on Vegetables classes, evaluated using 50%, 25%, and 12.5% of the available training images (i.e., reduced numbers of input views).

Classes	Instant-NGP (50%)			Instant-NGP (25%)			Instant-NGP (12.5%)		
	PSNR	SSIM	LPIPS	PSNR	SSIM	LPIPS	PSNR	SSIM	LPIPS
Broccoli	20.69	0.607	0.5528	19.33	0.569	0.5718	18.38	0.529	0.5755
Cabbages	21.68	0.740	0.4251	20.14	0.719	0.4406	18.96	0.667	0.4881
Corn	22.85	0.735	0.3741	19.73	0.676	0.4210	13.97	0.428	0.7244
Cucumbers	26.00	0.821	0.2946	20.58	0.679	0.4316	15.52	0.541	0.5875
Garlic	30.11	0.890	0.1864	26.67	0.852	0.2276	20.72	0.776	0.3341
Gourds	27.37	0.852	0.2641	23.98	0.805	0.3141	17.10	0.659	0.4884
Onions	24.52	0.740	0.3782	22.27	0.727	0.3931	17.88	0.643	0.4878
Peppers	23.33	0.760	0.3359	19.98	0.691	0.4162	15.81	0.547	0.5769
Plantains	26.80	0.802	0.2951	27.35	0.867	0.2243	22.00	0.789	0.3356
Potatoes	24.72	0.778	0.3429	22.11	0.761	0.3670	15.74	0.599	0.5587
Radish	22.17	0.718	0.3626	22.14	0.716	0.3681	18.86	0.607	0.4287
Tomatoes	26.00	0.782	0.2793	24.09	0.792	0.2670	16.12	0.506	0.5830
Various Veggies	18.73	0.624	0.5166	17.21	0.592	0.5545	14.13	0.438	0.7238

Table 14. Performance metrics (PSNR, SSIM, LPIPS) for Instant-NGP [36] on Packages classes, evaluated using 50%, 25%, and 12.5% of the available training images (i.e., reduced numbers of input views).

Classes	Instant-NGP (50%)			Instant-NGP (25%)			Instant-NGP (12.5%)		
	PSNR	SSIM	LPIPS	PSNR	SSIM	LPIPS	PSNR	SSIM	LPIPS
Alfredo	19.21	0.658	0.4765	15.65	0.518	0.5785	14.10	0.536	0.6969
AppleJuice	17.61	0.554	0.6293	16.01	0.570	0.5644	9.42	0.348	0.9474
BBQSauce	14.13	0.496	0.7295	11.55	0.367	0.8103	8.76	0.223	0.9175
Bagels	22.60	0.725	0.3680	19.35	0.642	0.4459	15.34	0.525	0.5501
Beans	13.93	0.493	0.6716	19.35	0.642	0.4459	10.69	0.256	0.8580
Bread	19.29	0.639	0.5161	10.46	0.328	0.7378	12.29	0.412	0.7283
Buns	22.45	0.721	0.4093	16.49	0.590	0.5280	10.34	0.140	0.8854
Can	17.04	0.549	0.5719	12.22	0.365	0.7390	11.59	0.316	0.7883
Candy	20.23	0.682	0.4372	17.28	0.583	0.5150	12.04	0.367	0.7611
Cereal	16.30	0.514	0.5845	14.59	0.534	0.5954	9.73	0.266	0.9491
Chilli	18.67	0.627	0.4793	12.50	0.307	0.8088	9.13	0.133	1.0128
Chips	17.73	0.581	0.5455	15.61	0.512	0.6143	12.07	0.362	0.7902
ChipsSalsa	10.10	0.377	0.8790	13.90	0.543	0.5983	10.31	0.387	0.6653
Coffee	18.27	0.632	0.5348	16.22	0.546	0.6010	12.74	0.419	0.7260
Dressings	18.05	0.653	0.5035	13.13	0.487	0.6488	10.80	0.386	0.7381
Drinks	19.74	0.589	0.4945	20.10	0.685	0.4318	14.92	0.473	0.5956
EnergyDrinks	21.64	0.686	0.4400	19.74	0.643	0.4727	14.98	0.533	0.6216
Flour	21.75	0.741	0.4247	18.43	0.661	0.5228	13.18	0.406	0.7564
FruitCans	21.17	0.700	0.3948	18.31	0.610	0.5034	10.80	0.254	0.8044
Gatorade	16.28	0.508	0.6555	16.58	0.477	0.6344	14.25	0.491	0.5833
GranolaBars	19.47	0.677	0.4668	14.00	0.542	0.6384	12.92	0.445	0.7319
Greens	20.43	0.621	0.4918	19.37	0.639	0.4850	15.25	0.465	0.6285
Honey	24.05	0.773	0.3281	20.64	0.700	0.3979	14.97	0.500	0.6739
Jam	13.54	0.432	0.6793	11.11	0.334	0.7272	10.34	0.356	0.8950
Juices	19.36	0.651	0.4670	16.37	0.522	0.5755	11.62	0.323	0.8025
Ketchup	20.13	0.698	0.4209	16.72	0.580	0.5391	12.67	0.417	0.7069
Mayo	12.72	0.423	0.7125	10.89	0.303	0.8675	8.36	0.290	0.8664
Nuts	23.19	0.754	0.3365	19.19	0.646	0.4613	14.89	0.478	0.6209
Oil	16.46	0.529	0.6338	13.11	0.427	0.7367	10.99	0.305	0.8575
OliveOil	15.92	0.475	0.6363	15.49	0.592	0.6104	11.09	0.383	0.7424
PastaSauce	20.07	0.657	0.4707	15.10	0.491	0.6548	11.90	0.338	0.7653
PeanutButter	19.45	0.632	0.5041	15.66	0.537	0.5932	11.34	0.381	0.7744
Pickles	18.14	0.586	0.5462	11.50	0.326	0.7660	10.81	0.279	0.8691
Pringles	16.11	0.546	0.6432	17.82	0.616	0.4817	13.85	0.484	0.6086
Ranch	18.50	0.614	0.5539	14.79	0.465	0.6532	12.93	0.418	0.7264
Salsa	17.24	0.506	0.6262	14.40	0.428	0.7103	13.84	0.383	0.7586
Sauce	17.54	0.572	0.5486	13.51	0.430	0.7043	9.63	0.215	0.9030
Snacks	17.79	0.611	0.5132	17.40	0.613	0.5259	10.80	0.346	0.8130
Soup	14.94	0.530	0.6237	11.67	0.345	0.8601	9.38	0.141	0.9322
Spices	17.93	0.598	0.5665	15.72	0.539	0.5874	11.42	0.278	0.8380
Sugar	14.89	0.452	0.6860	13.55	0.468	0.7048	10.85	0.386	0.8206
Syrup	24.23	0.777	0.3141	19.37	0.670	0.4279	12.26	0.361	0.7704
Tea	15.81	0.541	0.6378	10.09	0.202	1.0061	9.35	0.369	0.8351
Tomato	17.58	0.540	0.5728	13.77	0.455	0.6857	8.13	0.173	0.9129
Tostitos	19.69	0.640	0.4602	14.18	0.384	0.7404	12.75	0.438	0.6588
Vinegar	16.11	0.573	0.5712	10.34	0.308	0.8759	11.41	0.323	0.8349

Table 15. Performance metrics (PSNR, SSIM, LPIPS) for Instant-NGP [36] on Fruits classes, evaluated using 50%, 25%, and 12.5% of their original resolution (i.e., reduced pixel counts).

Classes	Instant-NGP (50%)			Instant-NGP (25%)			Instant-NGP (12.5%)		
	PSNR	SSIM	LPIPS	PSNR	SSIM	LPIPS	PSNR	SSIM	LPIPS
Apples	24.99	0.767	0.3187	26.84	0.786	0.1780	20.02	0.528	0.4282
Avacados	25.89	0.777	0.2977	25.09	0.759	0.2262	26.14	0.812	0.1462
Bananas	24.90	0.784	0.3208	27.35	0.846	0.1201	22.67	0.688	0.2458
Coconuts	30.20	0.854	0.2368	33.57	0.945	0.0364	32.92	0.959	0.0149
GrapeFruits	26.41	0.752	0.3550	21.02	0.540	0.5048	23.70	0.655	0.3218
Lemons	26.35	0.789	0.3121	31.38	0.921	0.0376	26.51	0.766	0.1317
Lime	19.30	0.540	0.5410	22.91	0.670	0.3287	28.16	0.928	0.0272
Mangoes	28.78	0.858	0.2141	31.58	0.930	0.0382	21.85	0.594	0.3263
Melons	25.71	0.794	0.3155	29.67	0.886	0.0778	22.80	0.634	0.3649
MultiFruits	23.32	0.744	0.3557	26.87	0.853	0.0927	25.56	0.794	0.1450
Nectarines	28.21	0.833	0.2374	31.06	0.926	0.0469	22.26	0.600	0.3080
Orange	25.44	0.773	0.3381	27.28	0.793	0.1587	20.36	0.546	0.4015
Pears	28.73	0.846	0.2239	28.86	0.831	0.1220	23.88	0.673	0.3090
Pineapples	23.38	0.724	0.3614	20.52	0.631	0.3099	22.52	0.694	0.2641
Plums	24.94	0.789	0.2912	27.74	0.886	0.0811	19.31	0.491	0.5699

Table 16. Performance metrics (PSNR, SSIM, LPIPS) for Instant-NGP [36] on Vegetables classes, evaluated using 50%, 25%, and 12.5% of their original resolution (i.e., reduced pixel counts).

Classes	Instant-NGP (50%)			Instant-NGP (25%)			Instant-NGP (12.5%)		
	PSNR	SSIM	LPIPS	PSNR	SSIM	LPIPS	PSNR	SSIM	LPIPS
Broccoli	19.82	0.591	0.5627	22.95	0.675	0.2872	23.98	0.732	0.2095
Cabbages	21.78	0.744	0.4184	26.37	0.838	0.1208	15.59	0.489	0.4979
Corn	22.69	0.734	0.3747	26.88	0.880	0.0951	25.79	0.905	0.0530
Cucumbers	26.01	0.821	0.2948	25.41	0.787	0.2112	22.20	0.679	0.2533
Garlic	30.15	0.890	0.1870	19.84	0.547	0.4604	32.93	0.972	0.0101
Gourds	27.12	0.850	0.2672	31.60	0.922	0.0495	22.66	0.659	0.2636
Onions	24.56	0.743	0.3737	24.09	0.683	0.3036	23.24	0.680	0.2494
Peppers	23.33	0.760	0.3344	23.57	0.695	0.2952	20.13	0.577	0.3603
Plantains	26.81	0.801	0.2979	32.62	0.942	0.0412	23.86	0.673	0.1844
Potatoes	24.63	0.785	0.3561	26.33	0.765	0.2066	24.61	0.782	0.1311
Radish	21.99	0.714	0.3660	24.58	0.783	0.1546	21.06	0.596	0.2595
Tomatoes	26.06	0.783	0.2758	30.07	0.917	0.0456	25.34	0.734	0.1720
Various Veggies	18.95	0.629	0.5218	21.87	0.654	0.3404	17.79	0.486	0.3411

Table 17. Performance metrics (PSNR, SSIM, LPIPS) for Instant-NGP [36] on Vegetables classes, evaluated using 50%, 25%, and 12.5% of their original resolution (i.e., reduced pixel counts).

Classes	Instant-NGP (50%)			Instant-NGP (25%)			Instant-NGP (12.5%)		
	PSNR	SSIM	LPIPS	PSNR	SSIM	LPIPS	PSNR	SSIM	LPIPS
Alfredo	19.00	0.656	0.4773	17.04	0.420	0.5336	17.21	0.465	0.3294
AppleJuice	17.84	0.558	0.6220	20.93	0.679	0.1981	13.78	0.259	0.6846
BBQSauce	13.93	0.492	0.7295	20.31	0.601	0.3252	16.59	0.520	0.4214
Bagels	22.66	0.725	0.3661	12.60	0.278	0.7182	19.73	0.594	0.3159
Beans	13.88	0.487	0.6587	17.78	0.530	0.4316	13.27	0.264	0.6375
Bread	19.33	0.638	0.5134	20.88	0.610	0.3836	16.92	0.448	0.4410
Buns	22.47	0.720	0.4131	25.67	0.839	0.1263	17.04	0.469	0.4094
Can	17.00	0.549	0.5687	19.53	0.597	0.3594	16.64	0.454	0.4259
Candy	20.08	0.679	0.4401	21.77	0.680	0.2715	19.36	0.608	0.3049
Cereal	16.48	0.520	0.5914	9.96	0.111	0.7847	29.02	0.934	0.0259
Chilli	18.54	0.627	0.4807	15.91	0.420	0.5242	17.46	0.449	0.5916
Chips	18.23	0.592	0.5280	20.14	0.616	0.3265	18.01	0.515	0.3982
ChipsSalsa	9.55	0.355	0.8928	21.65	0.683	0.2675	22.30	0.768	0.1297
Coffee	18.18	0.628	0.5317	19.53	0.574	0.3985	16.52	0.466	0.4084
Dressings	18.09	0.649	0.5055	24.55	0.795	0.1512	24.22	0.837	0.0788
Drinks	19.62	0.586	0.4933	16.80	0.460	0.4687	13.94	0.351	0.5498
EnergyDrinks	21.69	0.686	0.4387	17.08	0.475	0.4712	17.43	0.446	0.5558
Flour	21.80	0.742	0.4226	19.86	0.541	0.4242	18.34	0.465	0.4232
FruitCans	21.26	0.700	0.3940	24.14	0.815	0.1325	16.56	0.440	0.5484
Gatorade	16.24	0.545	0.6346	16.35	0.450	0.5411	19.05	0.659	0.2111
GranolaBars	19.29	0.674	0.4714	13.53	0.298	0.7391	9.81	0.074	0.9792
Greens	20.25	0.616	0.4903	22.14	0.674	0.2870	19.14	0.548	0.4091
Honey	24.27	0.772	0.3284	9.64	0.074	0.9864	11.17	0.197	0.5092
Jam	13.82	0.468	0.6665	16.05	0.435	0.4799	20.85	0.648	0.2768
Juices	19.42	0.652	0.4656	17.93	0.487	0.4645	18.12	0.547	0.3180
Ketchup	20.10	0.697	0.4217	24.38	0.797	0.1395	19.65	0.601	0.3545
Mayo	12.71	0.428	0.7099	19.26	0.565	0.4254	20.95	0.653	0.3199
Nuts	23.21	0.754	0.3354	20.03	0.525	0.4744	15.86	0.348	0.5863
Oil	16.56	0.526	0.6344	18.28	0.518	0.3672	15.80	0.425	0.4539
OliveOil	15.97	0.488	0.6428	18.49	0.567	0.4240	22.28	0.790	0.1135
PastaSauce	20.11	0.656	0.4645	16.85	0.455	0.5984	12.85	0.278	0.6464
PeanutButter	19.47	0.644	0.5039	20.80	0.658	0.2650	19.14	0.599	0.3291
Pickles	18.16	0.588	0.5467	18.99	0.545	0.4678	21.15	0.664	0.2400
Pringles	15.12	0.538	0.6385	25.35	0.839	0.1006	25.64	0.895	0.0419
Ranch	18.50	0.613	0.5541	23.29	0.741	0.2014	17.71	0.530	0.3416
Salsa	17.24	0.505	0.6370	18.94	0.539	0.4258	15.18	0.375	0.4747
Sauce	17.64	0.573	0.5487	20.36	0.633	0.2759	17.79	0.516	0.3213
Snacks	17.46	0.601	0.5229	20.99	0.698	0.2539	19.50	0.640	0.2665
Soup	15.04	0.531	0.6227	18.76	0.563	0.3335	8.17	0.035	0.8374
Spices	17.99	0.602	0.5634	18.79	0.548	0.3892	17.25	0.518	0.3986
Sugar	15.10	0.448	0.6854	20.85	0.603	0.4142	18.06	0.516	0.4084
Syrup	24.21	0.777	0.3163	20.76	0.604	0.3742	16.02	0.437	0.3484
Tea	15.78	0.500	0.6308	17.65	0.521	0.3132	23.93	0.852	0.0721
Tomato	17.68	0.542	0.5649	15.00	0.341	0.6284	9.41	0.096	0.6917
Tostitos	19.58	0.639	0.4621	21.84	0.728	0.1922	16.72	0.454	0.3048
Vinegar	16.33	0.579	0.5687	19.74	0.641	0.3067	14.12	0.315	0.6378



Figure 10. Scene reconstruction of a grocery store using Mip Splatting [52], illustrating dense object arrangements and viewpoint trajectories.



Figure 11. Scene reconstruction of a grocery store using Instant-NGP [36], illustrating dense object arrangements and viewpoint trajectories.