Appendix

Here we report a selection of materials that provides further insight into our experiments. We start by showing an extract of reference images from DSynView on which the quality assessment was conducted. Next, we present a greater variety of qualitative results that show the influence of different parameters. To improve visibility, we subsequently show the extracted perspective images at larger size. Furthermore, we present qualitative results from experiments testing the limitations of MultiPanFusion. Finally, we show the full tables of quantitative results with MSTD and MPF, including all assessed parameters as well as two additional metrics, CLIP-score and CLIP Maximum Mean Discrepancy (CMMD) [19]. We visualize the influence of bootstrapping and mask size in the same way we did in Fig. 21.

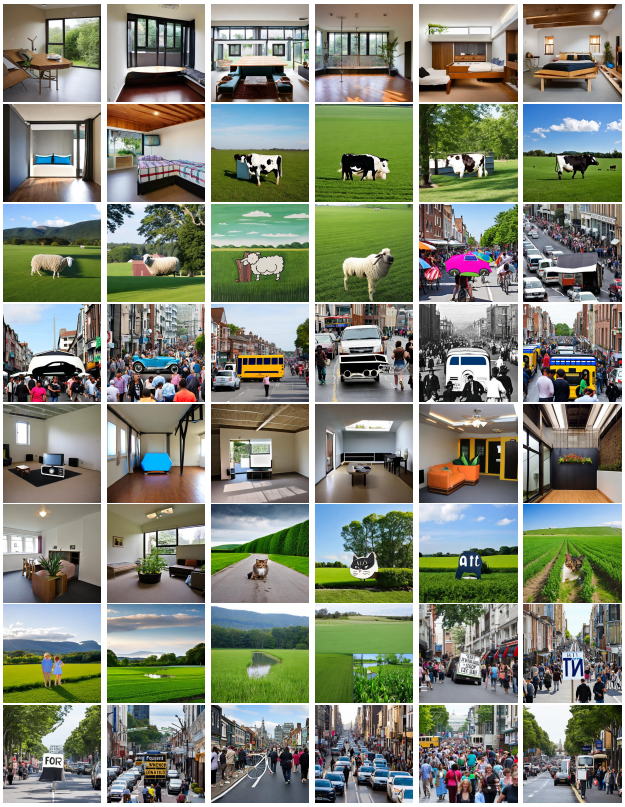

Fig. 6. Example images from our DSynView dataset

1.1. More Qualitative Results with MultiPanFusion

Fig. 7. Image-quality and -diversity of MSTD; showing a decent quality but also similar-looking backgrounds for different seeds.

Fig. 8. Influence of stitching-operation. Left: stitching. Right: No stitching

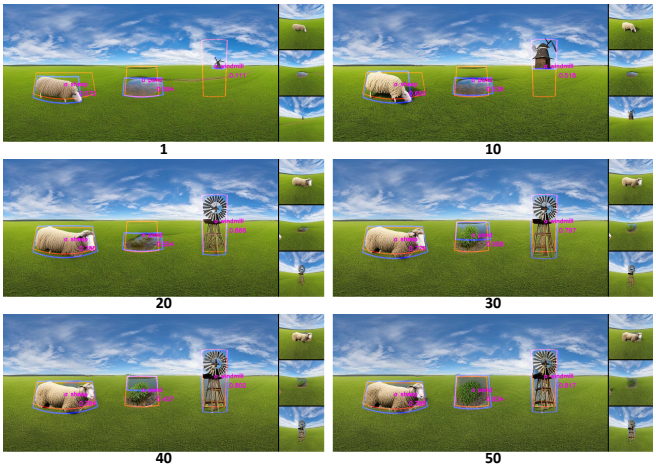

Fig. 9. Influence of bootstrapping, visualizing a smoother blending of objects and background at lower values and a higher mask-adherence at higher values.

Fig. 10. Influence of mask size. Top: small. Middle: middle. Bottom: large

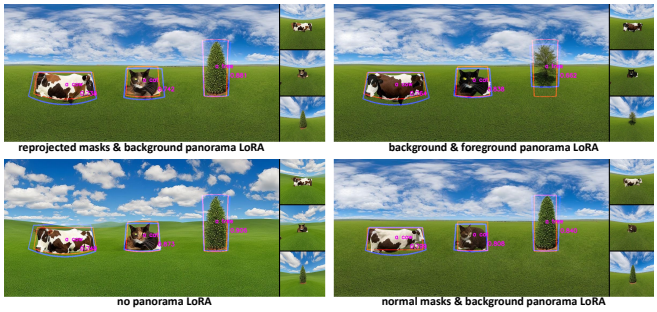

Fig. 11. Influence of spherical parameters. The top-left setting usually yields the best results, while the bottom-left is insufficient for spherical images, as the missing distortions in the ERP image show.

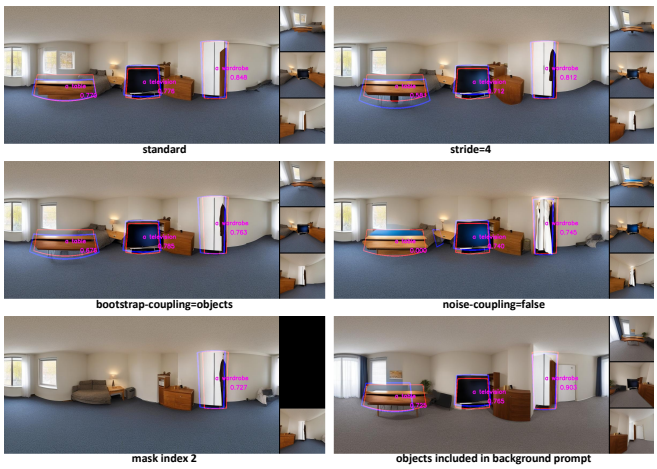

Fig. 12. Influence of other parameters. The comparison between the top-left and bottom-left images shows that adding more objects doesn't influence the background's or other object's look.

Fig. 13. Image-quality and -diversity of MPF. Contrarily to MSTD, images are filled with rich and varied content here but show some quality-reducing artifacts, like the blurry area behind the car.

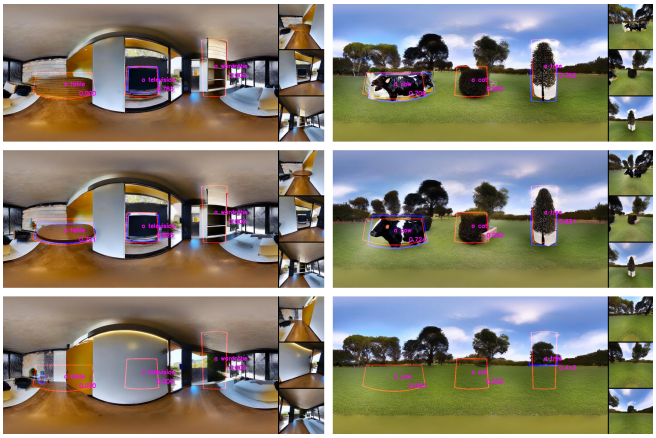

Fig. 14. Top: MD applied at the panorama branch only. Middle: MD applied at both branches. Bottom: MD applied at the perspective branch only, which fails to synthesize objects.

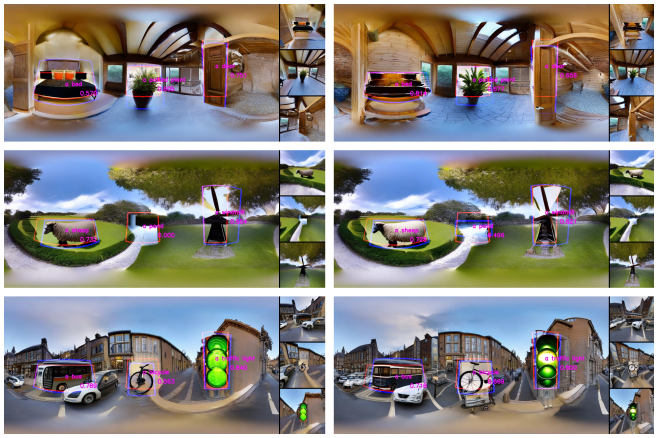

Fig. 15. Left: EPPA employed at all paths. Right: EPPA employed only at the background during bootstrapping. The pond can only be recognized in the right image. Such cases cause the IoU to increase in this setting.

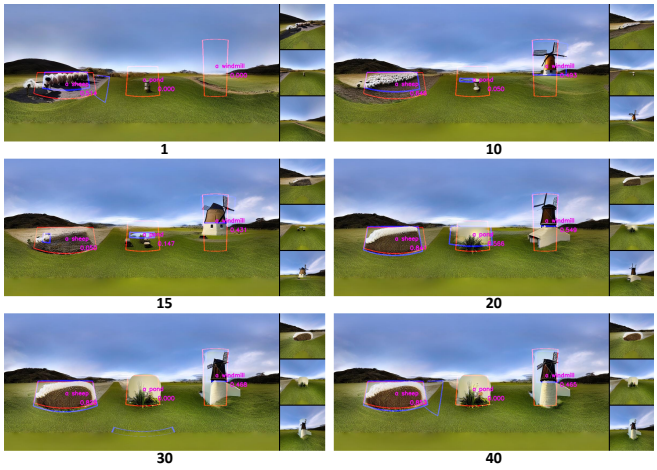

Fig. 16. Influence of bootstrapping on MPF, showing similar effects as with MSTD.

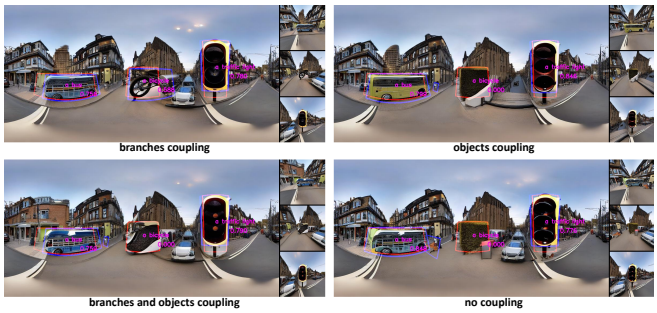

Fig. 17. Influence of bootstrap-coupling. The largest effect can be seen at the middle object, where the bicycle only becomes visible with branches coupling

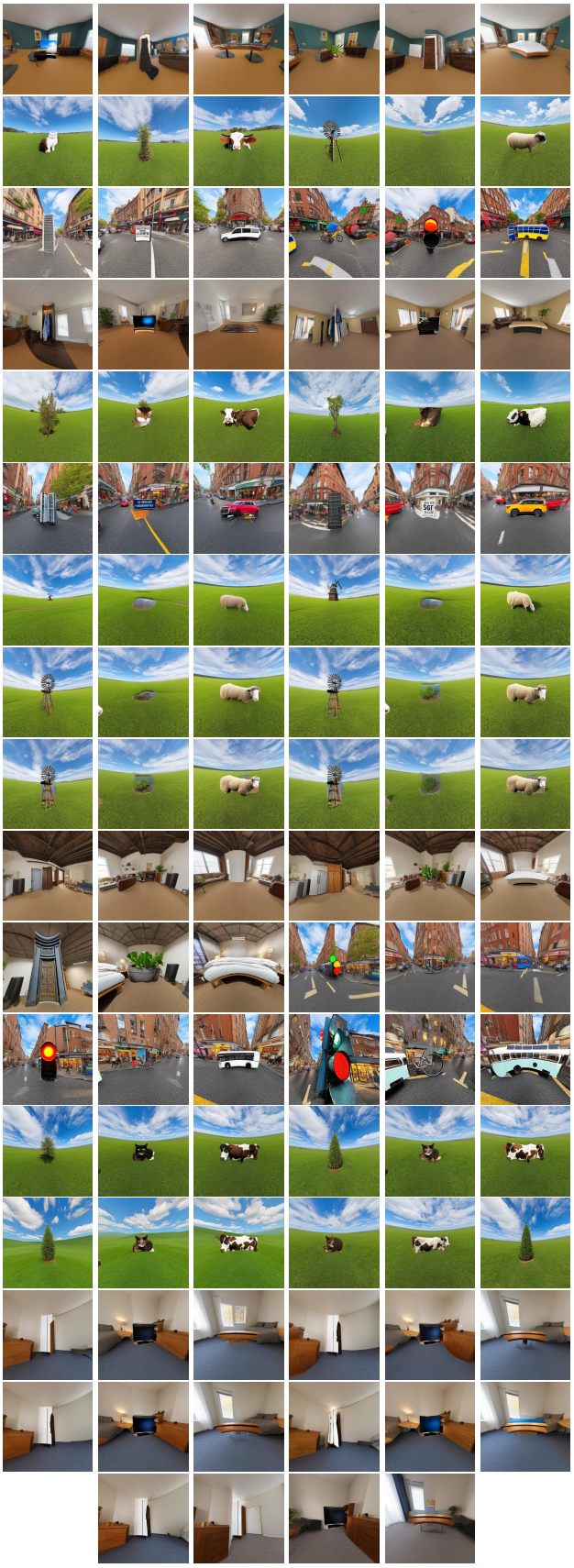

Fig. 18. Perspective Images of MultiStitchDiffusion's qualitative results

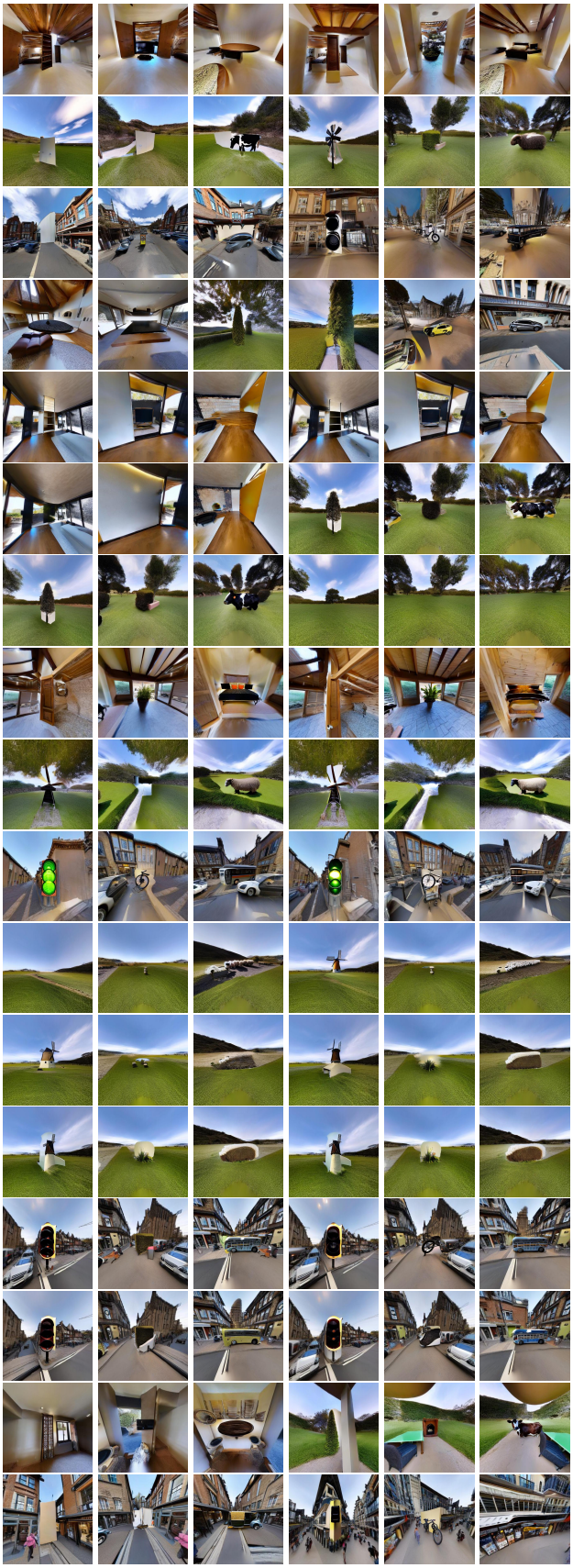

Fig. 19. Perspective Images of MultiPanFusion's qualitative results

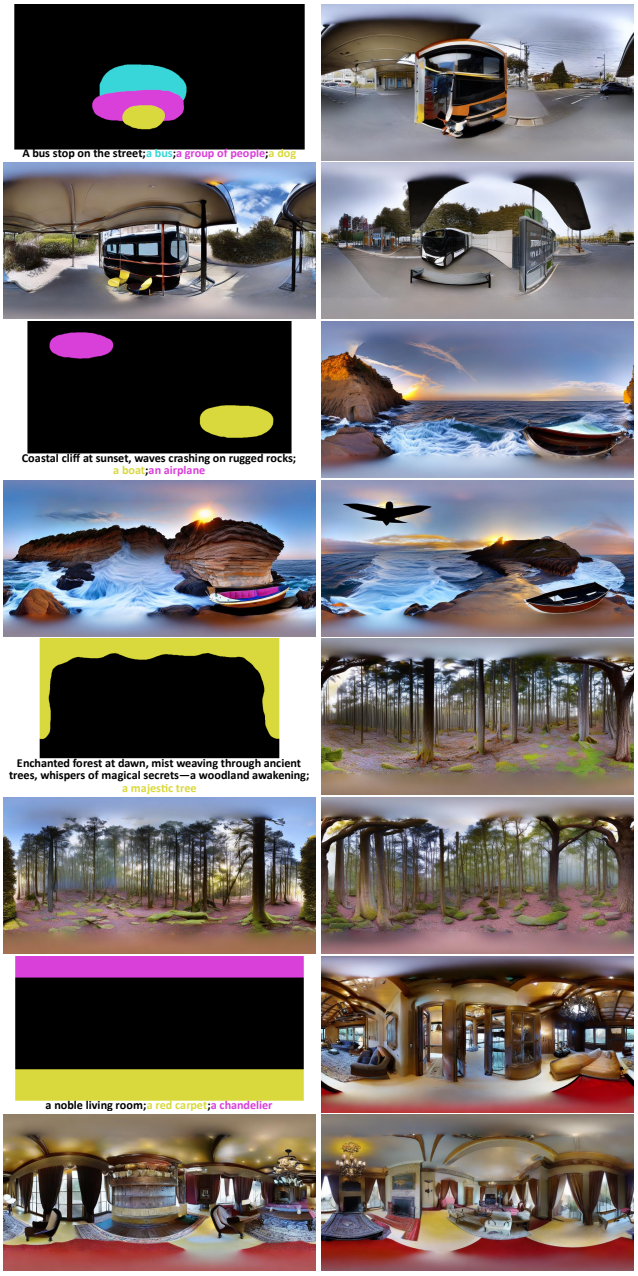

Fig. 20. Corner cases of MultiPanFusion with free-hand masks. The model has problems synthesizing objects near the top and bottom poles. Elements at the horizontal image borders are unproblematic. Overlapping masks result in object-neglect and -distortion.

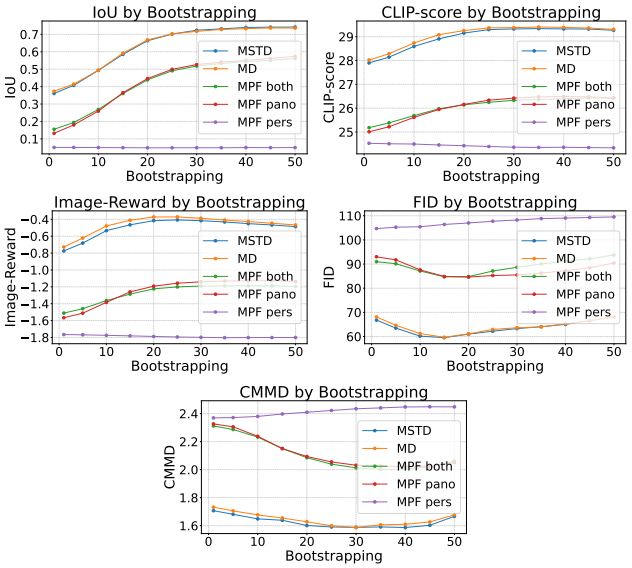

Fig. 21. The influence of bootstrapping on our metrics for every approach, showing a functional relationship which is non-monotonous at FID.

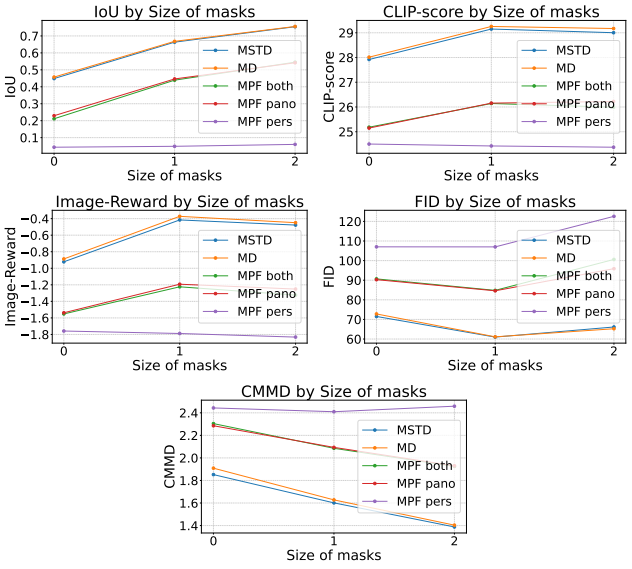

Fig. 22. The influence of mask size on our metrics for every approach. The plots show a similar effect as with bootstrapping.

		without StitchDiffusion process					with StitchDiffusion process				
		IoU↑	CS↑	IR↑	FID↓	CMMD↓	IoU↑	CS↑	IR↑	FID↓	CMMD↓
bootstrap	1	0.36	27.90	-0.77	66.81	1.71	0.37	28.02	-0.73	68.11	1.73
	5	0.41	28.14	-0.68	63.50	1.68	0.41	28.28	-0.62	64.64	1.71
	10	0.49	28.59	-0.53	60.17	1.65	0.49	28.74	-0.48	61.23	1.68
	15	0.59	28.91	-0.47	59.53	1.64	0.59	29.08	-0.41	59.69	1.65
	20	0.66	29.15	-0.42	60.99	1.60	0.67	29.25	-0.37	61.12	1.63
	25	0.70	29.30	-0.41	62.23	1.59	0.70	29.37	-0.37	62.94	1.60
	30	0.72	29.33	-0.42	63.29	1.59	0.72	29.38	-0.39	63.63	1.59
	35	0.73	29.34	-0.43	64.08	1.59	0.73	29.40	-0.41	63.97	1.61
	40	0.74	29.33	-0.45	65.03	1.59	0.73	29.39	-0.43	65.28	1.61
	45	0.74	29.32	-0.47	66.53	1.60	0.74	29.36	-0.45	66.58	1.63
	50	0.74	29.27	-0.49	68.24	1.67	0.74	29.31	-0.47	68.05	1.68
stride	4	0.66	29.15	-0.44	62.47	1.63	0.68	29.27	-0.36	60.96	1.62
	8	0.67	29.18	-0.42	61.70	1.62	0.67	29.28	-0.37	61.13	1.62
	16	0.66	29.15	-0.42	60.99	1.60	0.67	29.25	-0.37	61.12	1.63
	32	0.67	29.15	-0.41	60.90	1.61	0.67	29.24	-0.37	61.32	1.62
size	0	0.45	27.92	-0.92	71.51	1.85	0.46	28.01	-0.89	72.79	1.91
	1	0.66	29.15	-0.42	60.99	1.60	0.67	29.25	-0.37	61.12	1.63
	2	**0.75**	29.00	-0.48	66.14	**1.39**	**0.76**	29.17	-0.45	65.25	**1.40**
pano	None	0.57	28.84	-0.56	82.50	1.50	0.57	28.91	-0.48	82.61	1.51
	BG	0.66	29.15	-0.42	60.99	1.60	0.67	29.25	-0.37	61.12	1.63
	All	0.56	28.66	-0.47	67.78	1.70	0.55	28.74	-0.43	68.42	1.72
proj	False	0.62	29.04	-0.49	61.35	1.61	0.63	29.16	-0.43	61.40	1.62
	True	0.66	29.15	-0.42	60.99	1.60	0.67	29.25	-0.37	61.12	1.63
mask idx	0	0.73	**29.94**	-0.58	75.89	1.64	0.73	**29.82**	-0.60	77.30	1.71
	1	0.57	28.64	-0.27	90.56	1.79	0.59	28.82	**-0.16**	91.10	1.77
	2	0.69	29.06	**-0.21**	81.71	1.50	0.69	29.17	-0.18	80.86	1.48
	01	0.65	29.17	-0.49	68.23	1.71	0.66	29.23	-0.42	68.67	1.75
	02	0.72	29.53	-0.42	63.40	1.52	0.71	29.55	-0.40	64.34	1.54
	12	0.64	28.83	-0.27	69.63	1.63	0.64	29.01	-0.20	69.20	1.60
	012	0.66	29.15	-0.42	60.99	1.60	0.67	29.25	-0.37	61.12	1.63
bootstrap coupling	None	0.66	29.15	-0.42	60.99	1.60	0.67	29.25	-0.37	61.12	1.63
	Objects	0.67	29.20	-0.41	61.04	1.62	0.67	29.30	-0.36	61.06	1.63
noise coupling	False	0.67	29.21	-0.41	61.42	1.61	0.68	29.32	-0.36	61.84	1.63
	True	0.66	29.15	-0.42	60.99	1.60	0.67	29.25	-0.37	61.12	1.63
global prompt	False	0.66	29.15	-0.42	60.99	1.60	0.67	29.25	-0.37	61.12	1.63
	True	0.58	29.23	-0.41	**56.38**	1.57	0.59	29.36	-0.35	**57.03**	1.59

Table 1. Complete results with MultiDiffusion and MultiStitchDiffusion

		MPF (md_both)					MPF (md_pano)				
		IoU↑	CS↑	IR↑	FID↓	CMMD↓	IoU↑	CS↑	IR↑	FID↓	CMMD↓
bootstrap	1	0.16	25.18	-1.51	90.99	2.31	0.13	25.01	-1.57	93.00	2.33
	5	0.19	25.38	-1.46	90.13	2.29	0.18	25.22	-1.51	91.73	2.31
	10	0.27	25.69	-1.36	87.13	2.23	0.26	25.61	-1.38	87.59	2.24
	15	0.36	25.97	-1.29	84.72	2.15	0.36	25.95	-1.26	84.85	2.15
	20	0.44	26.14	-1.22	84.82	2.09	0.45	26.16	-1.19	84.60	2.09
	25	0.49	26.25	-1.20	87.12	2.04	0.50	26.34	-1.16	85.26	2.06
	30	0.52	26.33	-1.19	88.66	2.01	0.53	26.42	-1.14	85.50	2.03
	35	0.53	26.36	-1.19	90.03	2.00	0.54	26.48	-1.13	86.26	2.03
	40	0.54	26.39	-1.19	91.23	2.00	0.55	26.49	-1.13	87.28	2.02
	45	0.55	26.43	-1.19	92.15	2.02	0.56	26.48	-1.13	88.47	2.03
	50	**0.56**	26.43	-1.20	93.76	2.06	**0.57**	26.42	-1.14	90.43	2.05
size	0	0.21	25.18	-1.55	90.67	2.30	0.23	25.15	-1.54	90.28	2.29
	1	0.44	26.14	-1.22	84.82	2.09	0.45	26.16	-1.19	84.60	2.09
	2	0.55	25.99	-1.32	100.59	**1.92**	0.54	26.22	-1.25	95.89	1.93
pano	BG	0.43	26.45	-1.23	81.90	2.07	0.49	26.89	-1.07	76.57	2.03
	All	0.44	26.14	-1.22	84.82	2.09	0.45	26.16	-1.19	84.60	2.09
proj	False	0.39	25.93	-1.29	85.31	2.11	0.39	25.97	-1.26	83.77	2.10
	True	0.44	26.14	-1.22	84.82	2.09	0.45	26.16	-1.19	84.60	2.09
mask_idx	0	0.53	**27.11**	-1.39	129.58	2.20	0.53	**27.02**	-1.41	132.93	2.23
	1	0.35	25.55	-1.18	113.10	2.22	0.34	25.36	-1.18	111.46	2.21
	2	0.48	25.98	**-1.05**	96.15	1.98	0.47	25.91	**-1.06**	97.75	1.97
	01	0.43	26.28	-1.30	102.09	2.20	0.43	26.18	-1.29	101.13	2.19
	02	0.50	26.55	-1.22	90.48	2.06	0.50	26.53	-1.20	92.74	2.03
	12	0.40	25.68	-1.13	86.82	2.08	0.41	25.65	-1.11	84.95	2.05
	012	0.44	26.14	-1.22	84.82	2.09	0.45	26.16	-1.19	84.60	2.09
bootstrap	None	0.43	26.04	-1.26	85.73	2.11	0.45	26.16	-1.19	84.63	2.09
coupling	Branches	0.44	26.14	-1.22	84.82	2.09	0.45	26.16	-1.19	84.60	2.09
	Objects	0.44	26.01	-1.25	86.53	2.10	0.44	26.02	-1.22	84.79	2.08
	All	0.44	26.09	-1.23	84.95	2.08	0.44	26.03	-1.22	84.85	2.08
noise	False	0.46	26.22	-1.19	84.49	2.10	0.46	26.24	-1.15	81.78	2.10
coupling	True	0.44	26.14	-1.22	84.82	2.09	0.45	26.16	-1.19	84.60	2.09
global	False	0.44	26.14	-1.22	84.82	2.09	0.45	26.16	-1.19	84.60	2.09
prompt	True	0.41	26.43	-1.32	**77.20**	2.08	0.43	26.63	-1.25	**74.84**	2.05
fg_eppa	False	0.52	26.63	-1.10	82.21	2.06	0.53	26.70	-1.09	80.61	**1.97**
	True	0.44	26.14	-1.22	84.82	2.09	0.45	26.16	-1.19	84.60	2.09

Table 2. Results with MultiPanFusion (md_both and md_pano)

		MPF (md_both)					MPF (md_pers)				
		IoU↑	CS↑	IR↑	FID↓	CMMD↓	IoU↑	CS↑	IR↑	FID↓	CMMD↓
bootstrap	1	0.16	25.18	-1.51	90.99	2.31	0.05	24.53	-1.77	104.68	2.37
	5	0.19	25.38	-1.46	90.13	2.29	0.05	24.51	-1.77	105.25	2.37
	10	0.27	25.69	-1.36	87.13	2.23	0.05	24.49	-1.77	105.44	2.38
	15	0.36	25.97	-1.29	84.72	2.15	0.05	24.46	-1.78	106.40	2.40
	20	0.44	26.14	-1.22	84.82	2.09	0.05	24.42	-1.79	107.00	2.41
	25	0.49	26.25	-1.20	87.12	2.04	0.05	24.39	-1.79	107.73	2.42
	30	0.52	26.33	-1.19	88.66	2.01	0.05	24.36	-1.80	108.24	2.43
	35	0.53	26.36	-1.19	90.03	2.00	0.05	24.35	-1.80	108.81	2.44
	40	0.54	26.39	-1.19	91.23	2.00	0.05	24.36	-1.80	109.04	2.45
	45	0.55	26.43	-1.19	92.15	2.02	0.05	24.35	-1.80	109.27	2.45
	50	**0.56**	26.43	-1.20	93.76	2.06	0.05	24.34	-1.80	109.51	2.45
size	0	0.21	25.18	-1.55	90.67	2.30	0.04	24.50	-1.76	107.02	2.44
	1	0.44	26.14	-1.22	84.82	2.09	0.05	24.42	-1.79	107.00	2.41
	2	0.55	25.99	-1.32	100.59	**1.92**	0.06	24.37	-1.83	122.58	2.46
pano	BG	0.43	26.45	-1.23	81.90	2.07	0.05	24.36	-1.81	108.05	2.42
	All	0.44	26.14	-1.22	84.82	2.09	0.05	24.42	-1.79	107.00	2.41
proj	False	0.39	25.93	-1.29	85.31	2.11	0.05	24.42	-1.78	105.76	2.40
	True	0.44	26.14	-1.22	84.82	2.09	0.05	24.42	-1.79	107.00	2.41
mask_idx	0	0.53	**27.11**	-1.39	129.58	2.20	0.05	24.50	-1.96	162.83	2.68
	1	0.35	25.55	-1.18	113.10	2.22	0.02	24.29	-1.85	134.22	2.45
	2	0.48	25.98	**-1.05**	96.15	1.98	0.08	24.50	**-1.55**	135.32	2.38
	01	0.43	26.28	-1.30	102.09	2.20	0.03	24.39	-1.91	123.44	2.49
	02	0.50	26.55	-1.22	90.48	2.06	0.06	24.50	-1.75	120.81	2.43
	12	0.40	25.68	-1.13	86.82	2.08	0.05	24.41	-1.71	109.92	2.36
	012	0.44	26.14	-1.22	84.82	2.09	0.05	24.42	-1.79	107.00	2.41
bootstrap	None	0.43	26.04	-1.26	85.73	2.11	0.05	24.41	-1.79	107.09	2.41
coupling	Branches	0.44	26.14	-1.22	84.82	2.09	0.05	24.42	-1.79	107.00	2.41
	Objects	0.44	26.01	-1.25	86.53	2.10	0.05	24.42	-1.79	106.97	2.41
	All	0.44	26.09	-1.23	84.95	2.08	0.05	24.42	-1.79	107.02	2.41
noise	False	0.46	26.22	-1.19	84.49	2.10	0.05	24.41	-1.78	106.23	2.42
coupling	True	0.44	26.14	-1.22	84.82	2.09	0.05	24.42	-1.79	107.00	2.41
global	False	0.44	26.14	-1.22	84.82	2.09	0.05	24.42	-1.79	107.00	2.41
prompt	True	0.41	26.43	-1.32	**77.20**	2.08	**0.08**	**25.38**	-1.60	**81.94**	**2.29**
fg_eppa	False	0.52	26.63	-1.10	82.21	2.06	0.05	24.44	-1.79	106.68	2.42
	True	0.44	26.14	-1.22	84.82	2.09	0.05	24.42	-1.79	107.00	2.41

Table 3. Results with MultiPanFusion (md_both and md_pers)