

Natural Image Matting with Attended Global Context

1 Supplementary

1.1 Comparison with the State-of-the-art

We report four widely acknowledged metrics are used for evaluation: SAD (sum of absolution difference), MSE (mean square error), gradient, and connectivity of different methods on the alphamattng.com benchmark in Table 1 – Table 4. We compare the proposed method with five state-of-the-art deep learning-based methods. As a result, we observe that our method achieves competitive results among the state-of-the-art matting methods, especially in SAD and MSE metric.

Table 1. SAD Comparison with Top 6 State-Of-The-Art Baselines on the Alphamattng.com Online

SAD	overall	AVG			Troll			Doll			Donkey			Elephant			Plant			Pineapple			Plastic bag			Net		
		S	L	U	S	L	U	S	L	U	S	L	U	S	L	U	S	L	U	S	L	U	S	L	U	S	L	U
Ours	10.6	13.9	8.6	9.3	9	9.6	10.2	4.9	4.7	5.6	2.9	3.1	2.7	1.1	1.1	1.3	5.9	6.2	7.2	2.8	2.9	3.3	16.3	17	15.9	19.9	20.9	22.8
HDMatt [1]	11	13	9.8	10.1	9.5	10	10.7	4.7	4.8	5.8	2.9	3	2.6	1.1	1.2	1.3	5.2	5.9	6.7	2.4	2.6	3.1	17.3	17.3	17	21.5	22.4	23.2
AdaMatting [2]	13.5	12	12.5	16	10.2	11.1	10.8	4.9	5.4	6.6	3.6	3.4	3.4	0.9	0.9	1.8	4.7	6.8	9.3	2.2	2.6	3.3	19.2	19.8	18.7	17.8	19.1	18.6
A2U Matting [3]	13.6	12.8	10.5	17.5	9.3	9.7	10.9	4.8	4.9	5.3	3	3.1	2.8	1	1.1	1.4	5.1	6.7	8.5	2.5	3	5.9	17.3	18.4	18.1	20.6	20.6	27.3
SampleNet [4]	14	11.4	14.1	16.5	9.1	9.7	9.8	4.3	4.8	5.1	3.4	3.7	3.2	0.9	1.1	2	5.1	6.8	9.7	2.5	4	3.7	18.6	19.3	19.1	20	21.6	23.2
GCA Matting [5]	15.3	16.4	12.6	17	8.8	9.5	11.1	4.9	4.8	5.8	3.4	3.7	3.2	1.1	1.2	1.3	5.7	6.9	7.6	2.8	3.1	4.5	18.3	19.2	18.5	20.8	21.7	24.7

Note: S, L, U stand for small, large, user trimap respectively. The lowest errors are in bold.

Table 2. MSE Comparison with Top 6 State-Of-The-Art Baselines on the Alphamattng.com Online

MSE	overall	AVG			Troll			Doll			Donkey			Elephant			Plant			Pineapple			Plastic bag			Net		
		S	L	U	S	L	U	S	L	U	S	L	U	S	L	U	S	L	U	S	L	U	S	L	U	S	L	U
Ours	11	14.8	10.4	8	0.3	0.3	0.4	0.2	0.2	0.3	0.1	0.1	0.1	0	0	0	0.5	0.5	0.6	0.2	0.2	0.2	0.9	0.9	0.9	0.8	0.8	0.8
HDMatt [1]	11.2	13.9	9.8	10	0.3	0.3	0.4	0.2	0.2	0.3	0.1	0.1	0.1	0	0	0	0.4	0.4	0.6	0.1	0.2	0.2	0.9	0.9	0.9	0.8	0.8	0.8
AdaMatting [2]	14.2	11.5	13.1	18	0.3	0.4	0.4	0.2	0.2	0.3	0.2	0.2	0.2	0	0	0.1	0.4	0.6	1	0.1	0.2	0.3	1.1	1.2	1.1	0.6	0.6	0.6
SampleNet [4]	14.6	10.6	15.1	18	0.3	0.3	0.3	0.1	0.2	0.2	0.2	0.2	0.2	0	0	0.1	0.4	0.6	1.2	0.1	0.3	0.3	1.1	1.1	1.2	0.7	0.8	0.8
A2U Matting [3]	16.1	13.8	12.6	21.9	0.3	0.3	0.4	0.2	0.2	0.3	0.2	0.2	0.1	0	0	0.1	0.4	0.6	0.8	0.2	0.2	0.8	1	1	1	0.7	0.7	1.2
GCA Matting [5]	16.3	16.3	14.9	17.6	0.3	0.3	0.4	0.2	0.2	0.3	0.2	0.2	0.2	0	0	0.1	0.5	0.6	0.8	0.2	0.2	0.5	1	1.1	1.1	0.7	0.8	0.9

Note: S, L, U stand for small, large, user trimap respectively. The lowest errors are in bold.

Table 3. Gradient Comparison with Top 6 State-Of-The-Art Baselines on the Alphamattng.com Online

Gradient	overall	AVG			Troll			Doll			Donkey			Elephant			Plant			Pineapple			Plastic bag			Net		
		S	L	U	S	L	U	S	L	U	S	L	U	S	L	U	S	L	U	S	L	U	S	L	U	S	L	U
HDMatt [1]	9	9.8	7.4	9.9	0.2	0.2	0.2	0.1	0.1	0.3	0.1	0.1	0.2	0.2	0.2	0.3	1.1	1.2	1.6	0.6	0.6	0.9	0.5	0.5	0.6	0.3	0.4	0.4
Ours	11.9	14.3	10.6	10.8	0.2	0.1	0.2	0.2	0.1	0.3	0.1	0.2	0.2	0.2	0.2	0.3	1.3	1.4	1.5	0.7	0.8	0.9	0.6	0.8	0.6	0.4	0.4	0.5
A2U Matting [3]	12.3	11.4	8.5	16.9	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.2	0.2	0.2	0.2	0.4	1.1	1.3	1.9	0.6	0.7	1.7	0.6	0.6	0.6	0.3	0.3	0.4
AdaMatting [2]	13.7	9.6	11.4	20	0.2	0.2	0.2	0.1	0.1	0.4	0.2	0.2	0.2	0.1	0.1	0.3	1.1	1.4	2.3	0.4	0.6	0.9	0.9	1	0.9	0.3	0.4	0.4
GCA Matting [5]	14.1	14.1	12.6	15.6	0.1	0.1	0.2	0.1	0.1	0.3	0.2	0.2	0.2	0.2	0.2	0.3	1.3	1.6	1.9	0.7	0.8	1.4	0.6	0.7	0.6	0.4	0.4	0.4
SampleNet [4]	15.5	10.9	13.4	22.3	0.1	0.1	0.2	0.1	0.1	0.2	0.2	0.3	0.3	0.1	0.2	0.5	1.1	1.5	2.7	0.6	0.9	1	0.8	0.9	0.9	0.4	0.4	0.4

Note: S, L, U stand for small, large, user trimap respectively. The lowest errors are in bold.

Table 4. Connectivity Comparison with Top 6 State-Of-The-Art Baselines on the Alphamattng.com Online

Connectivity	overall	AVG			Troll			Doll			Donkey			Elephant			Plant			Pineapple			Plastic bag			Net		
		S	L	U	S	L	U	S	L	U	S	L	U	S	L	U	S	L	U	S	L	U	S	L	U	S	L	U
GCA Matting [5]	23.1	26.4	20.9	22	1.1	1.1	1	0.2	0.2	0.2	0.2	0.2	0.2	0	0	0	0.1	0.1	0.1	0.1	0.1	0.1	1.1	1.3	1.3	1.9	1.5	1.6
AdaMatting [2]	23.6	21	26.1	23.8	1.1	1.1	1.1	0.1	0.2	0.2	0.2	0.2	0.2	0	0	0	0.1	0.1	0.1	0	0	0.1	6.8	13.3	1.4	1.3	1.3	1.3
SampleNet [4]	27.1	28.7	24.3	28.5	0.9	0.9	0.8	0.1	0.1	0.1	0.2	0.2	0.2	0	0	0	0.1	0.1	0.2	0	0.1	0.2	1.5	1.5	1.8	3.8	3.9	3.8
A2U Matting [3]	28	30.7	28.7	24.9	0.8	0.8	0.8	0.2	0.2	0.1	0.2	0.2	0.2	0	0	0	0.1	0.2	0.3	0.1	0.1	0.1	1	0.9	1.1	4.8	4.6	4.5
HDMatt [1]	31.7	36.7	28	30.3	1.5	1.3	1.3	0.3	0.3	0.3	0.3	0.3	0.3	0	0	0	0.1	0.1	0.1	0	0	0	0.9	0.9	1.2	2.4	2.2	2.3
Ours	35.2	40	29.5	36.9	1.7	1.7	1.6	0.2	0.2	0.2	0.3	0.3	0.3	0	0	0	0.1	0.2	0.2	0.1	0.1	0.1	1.6	1.7	1.8	3.2	2.9	2.7

Note: S, L, U stand for small, large, user trimap respectively. The lowest errors are in bold.

References

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