

# Constant Time Weighted Median Filtering for Stereo Matching and Beyond

## Supplemental Material

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### 1. Clip-Art JPEG Artifact Removal

Fig. 1-5 show more results of clip-art JPEG artifact removal.

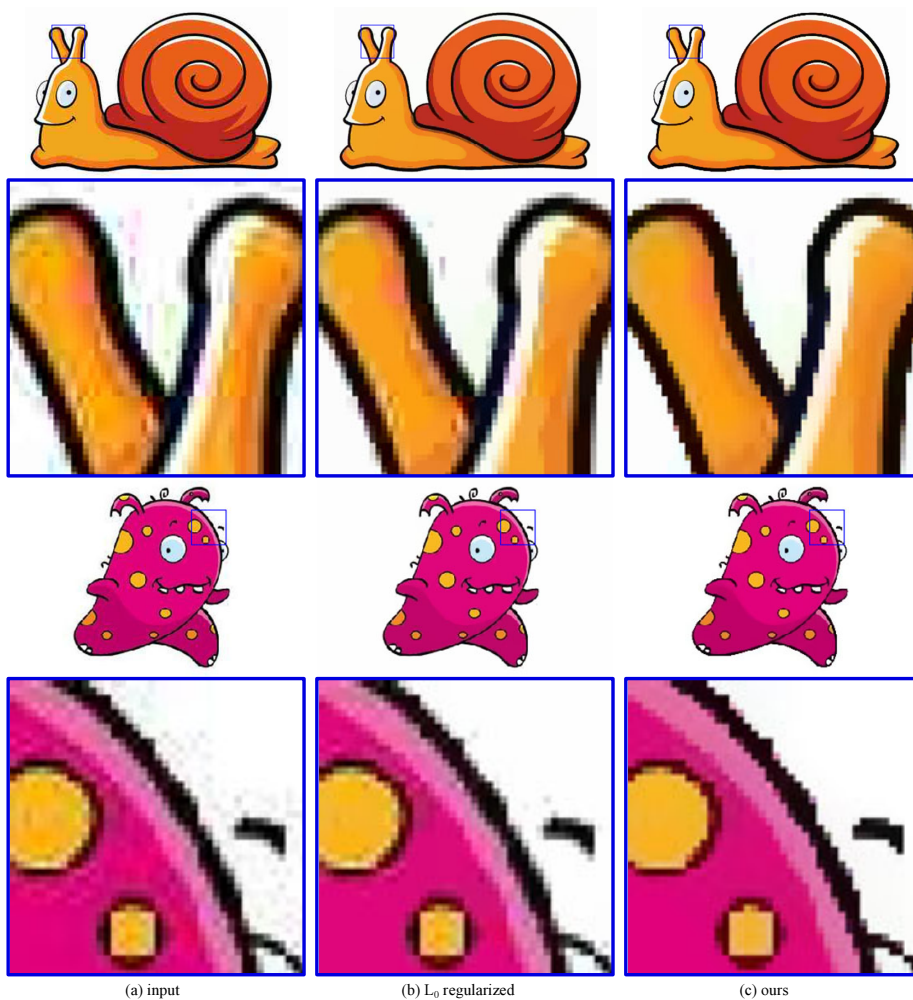
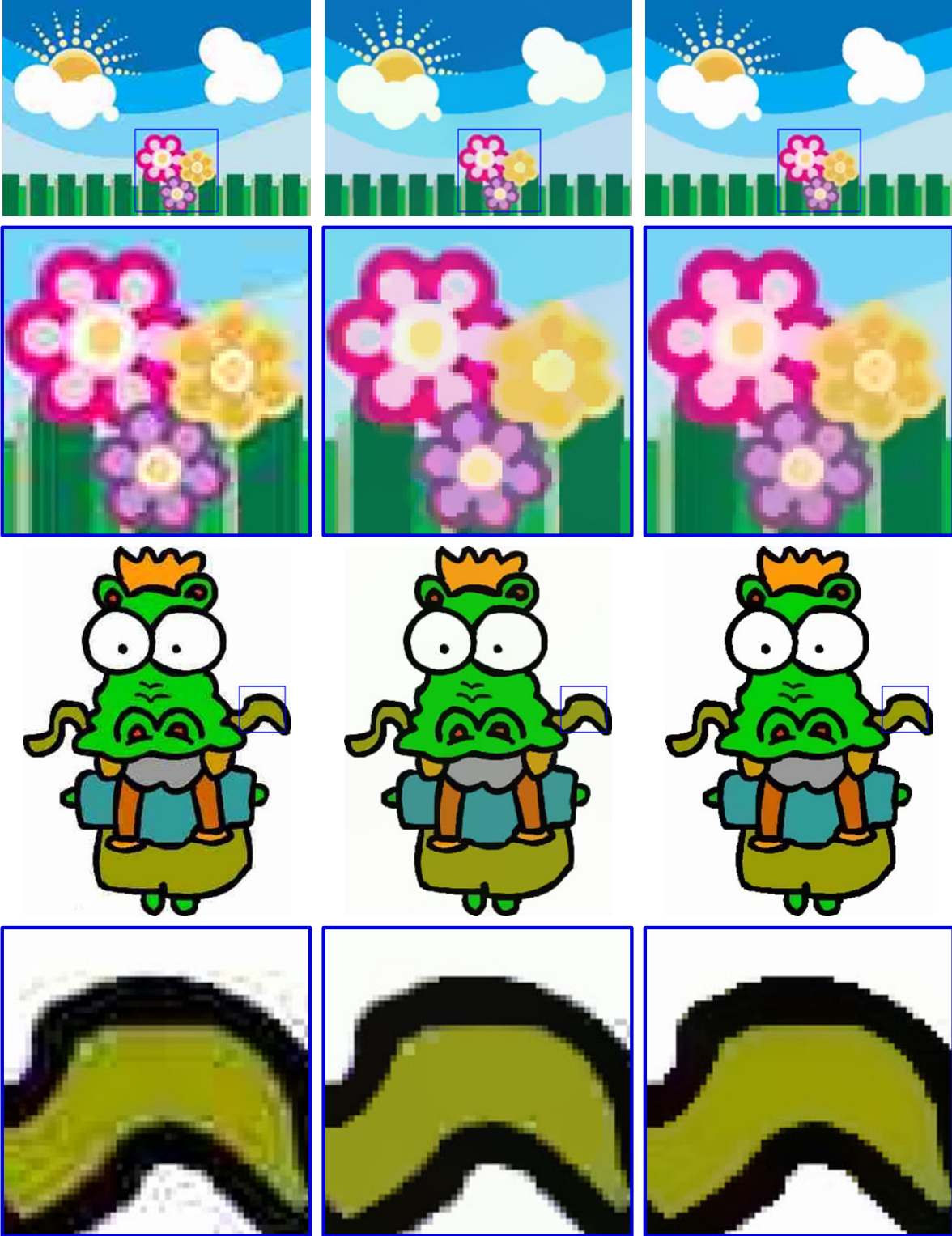


Figure 1. More results on clip-art JPEG compression artifact removal. (a) Input. (b) The  $L_0$  regularized method [2]. (c) Ours.

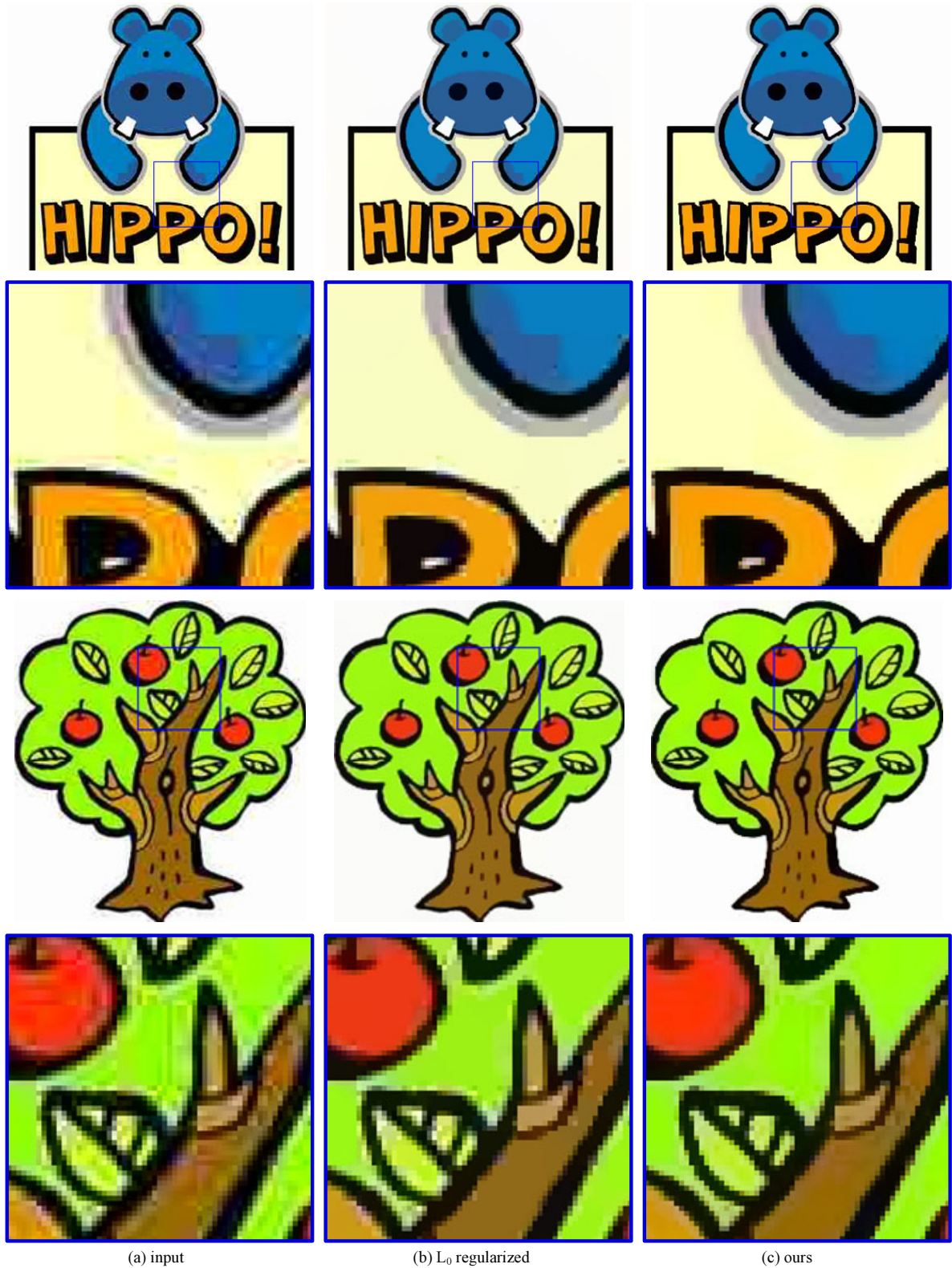


(a) input

(b)  $L_0$  regularized

(c) ours

Figure 2. More results on clip-art JPEG compression artifact removal. (a) Input. (b) The  $L_0$  regularized method [2]. (c) Ours.



(a) input

(b)  $L_0$  regularized

(c) ours

Figure 3. More results on clip-art JPEG compression artifact removal. (a) Input. (b) The  $L_0$  regularized method [2]. (c) Ours.



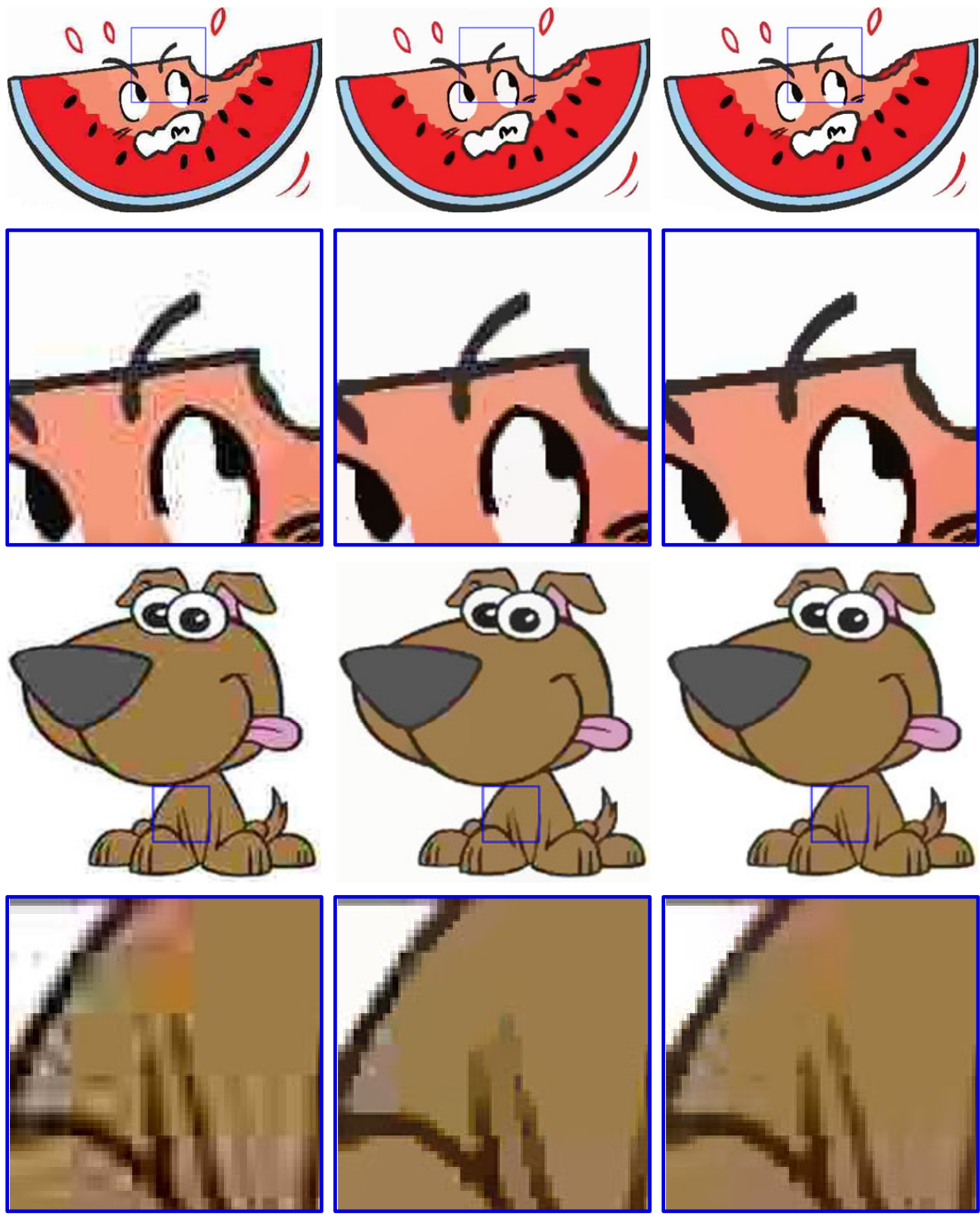


(a) input

(b)  $L_0$  regularized

(c) ours

Figure 4. More results on clip-art JPEG compression artifact removal. (a) Input. (b) The  $L_0$  regularized method [2]. (c) Ours.



(a) input

(b)  $L_0$  regularized

(c) ours

Figure 5. More results on clip-art JPEG compression artifact removal. (a) Input. (b) The  $L_0$  regularized method [2]. (c) Ours.

## 2. Depth Upsampling

Table 1 shows the comprehensive depth upsampling results.

Algorithm	Tsukuba			Venus			Teddy			Cones		
	Scale			Scale			Scale			Scale		
	2×	4×	8×	2×	4×	8×	2×	4×	8×	2×	4×	8×
Bilinear	1.62	3.31	6.40	0.73	1.50	3.22	4.60	7.38	13.55	4.24	8.56	16.63
Joint Bilateral [1]	1.43	2.61	5.15	0.50	0.78	2.54	4.91	7.78	14.43	4.02	7.50	16.23
Depth SR [3]	0.81	1.81	4.53	0.14	0.29	1.25	3.34	4.82	10.19	2.28	4.21	11.53
Ours	<b>0.79</b>	<b>1.69</b>	<b>4.35</b>	<b>0.07</b>	<b>0.20</b>	<b>1.09</b>	<b>2.82</b>	<b>4.09</b>	<b>8.58</b>	<b>1.44</b>	<b>3.53</b>	<b>9.34</b>

Table 1. Bad pixel percentage with error threshold 1 for 2×, 4×, and 8× depth upsampling on standard four Middlebury image pairs.

## References

- [1] J. Kopf, M. Cohen, D. Lischinski, and M. Uyttendaele. Joint bilateral upsampling. In *SIGGRAPH*, 2007.
- [2] L. Xu, C. Lu, Y. Xu, and J. Jia. Image smoothing via L0 gradient minimization. In *SIGGRAPH Asia*, 2011.
- [3] Q. Yang, R. Yang, J. Davis, and D. Nistér. Spatial-depth super resolution for range images. In *CVPR*, 2007.