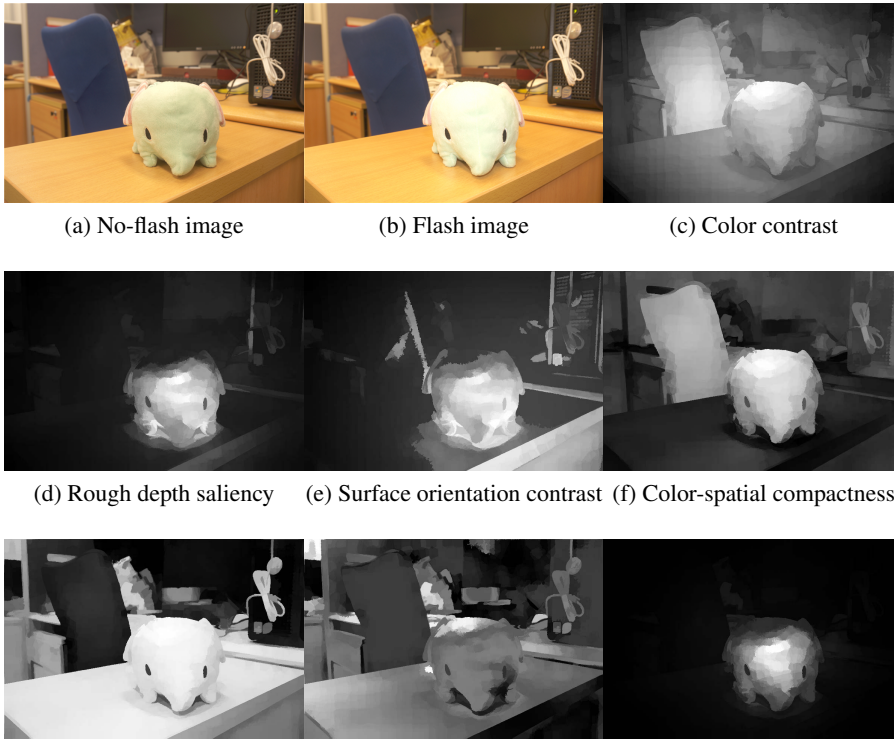
Saliency Detection with Flash and No-flash Image Pairs

Shengfeng He and Rynson W.H. Lau

Department of Computer Science
City University of Hong Kong
shengfeng_he@yahoo.com, rynson.lau@cityu.edu.hk

We present more results of the proposed method in Figures 1 – 7. In Figure 8, we show more comparisons on our new dataset with 7 state-of-the-art methods, of which the implementations are publicly available. They include CBS [1], CNTX [2], SVO [3], RC [4], HS [5], PCA [6], and GMR [7].



(a) No-flash image (b) Flash image (c) Color contrast

(d) Rough depth saliency (e) Surface orientation contrast (f) Color-spatial compactness

(g) Color-surface compactness (h) Surface-spatial compactness (i) Final saliency

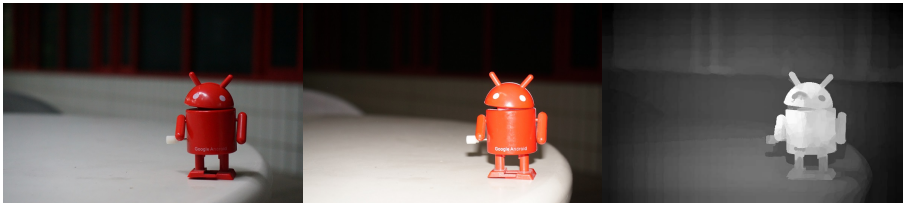
Fig. 1: Outputs of various components.

(a) No-flash image (b) Flash image (c) Color contrast

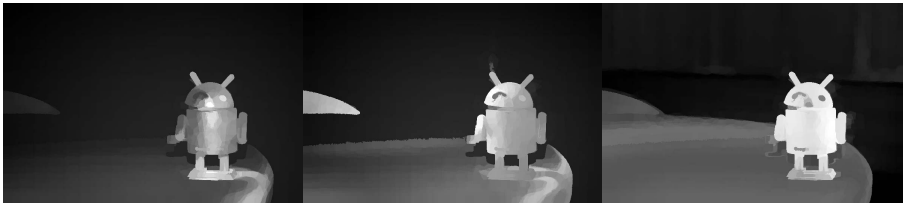
(d) Rough depth saliency (e) Surface orientation contrast (f) Color-spatial compactness

(g) Color-surface compactness (h) Surface-spatial compactness (i) Final saliency

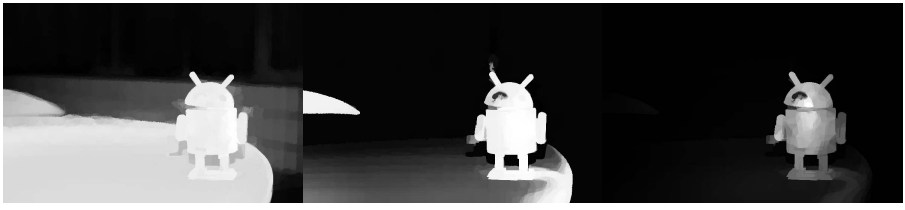
Fig. 2: Outputs of various components.



(a) No-flash image (b) Flash image (c) Color contrast



(d) Rough depth saliency (e) Surface orientation contrast (f) Color-spatial compactness



(g) Color-surface compactness (h) Surface-spatial compactness (i) Final saliency

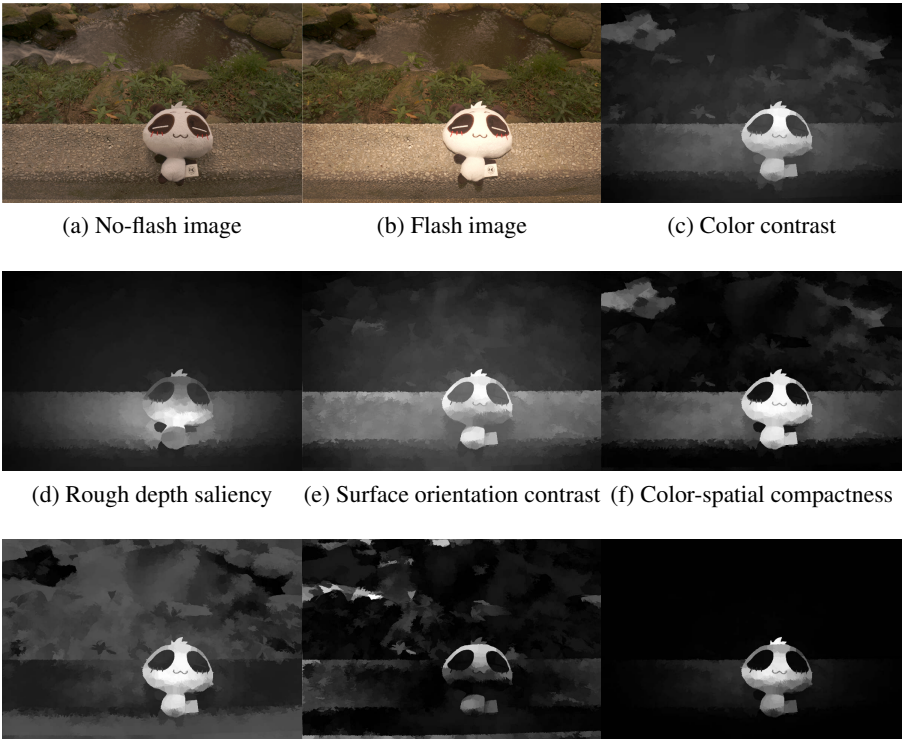
Fig. 3: Outputs of various components.

(a) No-flash image (b) Flash image (c) Color contrast

(d) Rough depth saliency (e) Surface orientation contrast (f) Color-spatial compactness

(g) Color-surface compactness (h) Surface-spatial compactness (i) Final saliency

Fig. 4: Outputs of various components.



(a) No-flash image (b) Flash image (c) Color contrast

(d) Rough depth saliency (e) Surface orientation contrast (f) Color-spatial compactness

(g) Color-surface compactness (h) Surface-spatial compactness (i) Final saliency

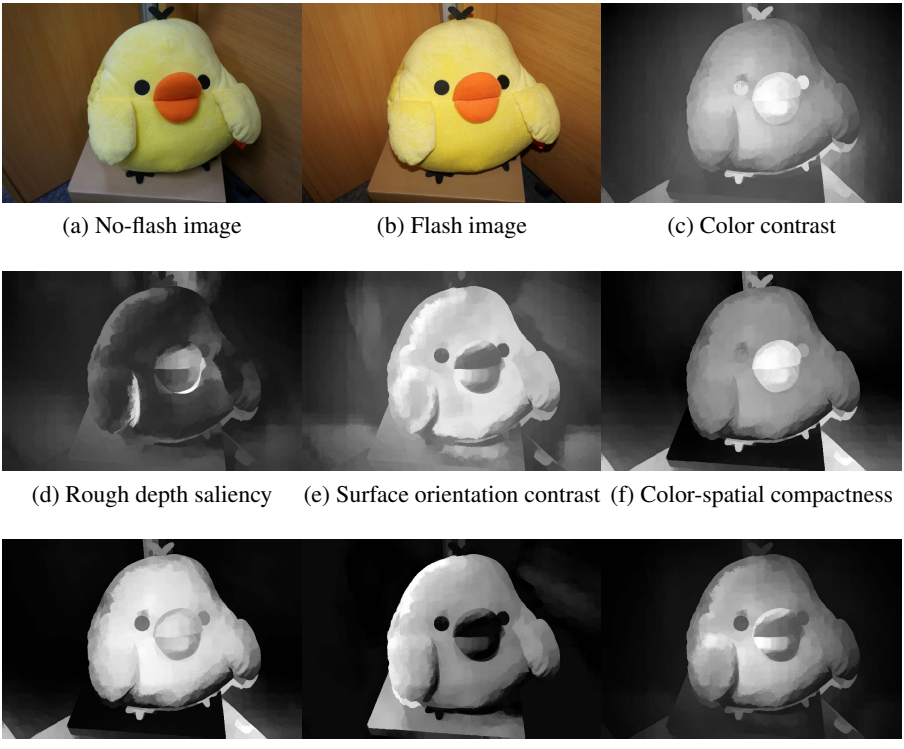
Fig. 5: Outputs of various components.

(a) No-flash image (b) Flash image (c) Color contrast

(d) Rough depth saliency (e) Surface orientation contrast (f) Color-spatial compactness

(g) Color-surface compactness (h) Surface-spatial compactness (i) Final saliency

Fig. 6: Outputs of various components.



(a) No-flash image (b) Flash image (c) Color contrast

(d) Rough depth saliency (e) Surface orientation contrast (f) Color-spatial compactness

(g) Color-surface compactness (h) Surface-spatial compactness (i) Final saliency

Fig. 7: Outputs of various components.

(a) Input images (b) GT (c) CBS (d) CNTX (e) SVO (f) RC (g) HS (h) PCA (i) GMR (j) Ours

Fig. 8: Comparison with the state-of-the-art methods. The proposed method consistently produces better saliency results.

References

1. Jiang, H., Wang, J., Yuan, Z., Liu, T., Zheng, N.: Automatic salient object segmentation based on context and shape prior. In: BMVC. (2011)
2. Goferman, S., Zelnik-Manor, L., Tal, A.: Context-aware saliency detection. In: CVPR. (2010)
3. Chang, K., Liu, T., Chen, H., Lai, S.: Fusing generic objectness and visual saliency for salient object detection. In: ICCV. (2011)
4. Cheng, M., Zhang, G., Mitra, N., Huang, X., Hu, S.: Global contrast based salient region detection. In: CVPR. (2011) 409–416
5. Yan, Q., Xu, L., Shi, J., Jia, J.: Hierachical saliency detection. In: CVPR. (2013)
6. Margolin, R., Tal, A., Zelnik-Manor, L.: What makes a patch distinct? In: CVPR. (2013)
7. Yang, C., Zhang, L., Lu, H., Ruan, X., Yang, M.H.: Saliency detection via graph-based manifold ranking. In: CVPR. (2013)