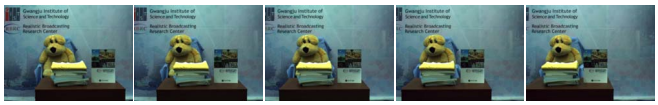
The other experimental results are shown in Figure 11. We also notice that the previous method fails to obtain the correct disparity information in some parts of the scene. However, the results of the proposed method shown in Fig. 11(e), using the initial disparity shown in Fig. 11(d), have the accurate and stable depth information.

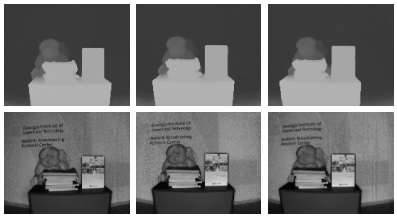
(a) Result without the depth cameras: view 2, view 3, and view 4

(b) Result by the proposed method: view 2, view 3, and view 4

Fig. 10. Multi-view disparity map

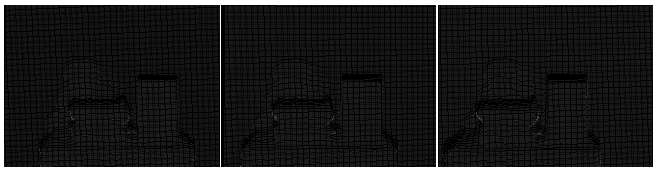


(a) Five-view color images



(b) Three-view depth and intensity images

(c) Result without the depth cameras: view 2, view 3, and view 4



(d) Initial disparity: view 2, view 3, and view 4

(e) Result by the proposed method: view 2, view 3, and view 4

Fig. 11. Results from the other test images

5. CONCLUSION

In this paper, we proposed a high-quality multi-view depth generation method using multiple color and depth cameras. After capturing five color images and three depth images, we performed preprocessing for the color images and depth images, respectively. Then, each depth image is warped to its corresponding color image position and used as the initial disparity information for stereo matching. The proposed method provided the high-quality three-view disparity map that has the accurate and stable depth information even at the homogeneous or weak textured regions.

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