

Detecting and Reconstructing 3D Mirror Symmetric Objects

Supplementary materials for ECCV 2012 paper

Sudipta N. Sinha, Krishnan Ramnath, and Richard Szeliski

Microsoft Research, Redmond, WA
`{sudipsin, kramnath, szeliski}@microsoft.com`

1 Additional Results

This document contains supplementary material for the above named paper. The items included here are:

1. **More results** similar to Figure 8 in the main paper.
2. **Curve matching results**: comparing the simple one-pass dynamic program vs. the intra-scanline two-pass DP.
3. **Feature matching results**: across different interest point detectors.
4. **Video animations showing view interpolation**: between the original image and its mirror-symmetric counterpart. To interpolate the color values, we horizontally interpolate the sparse disparity values in each scanline.

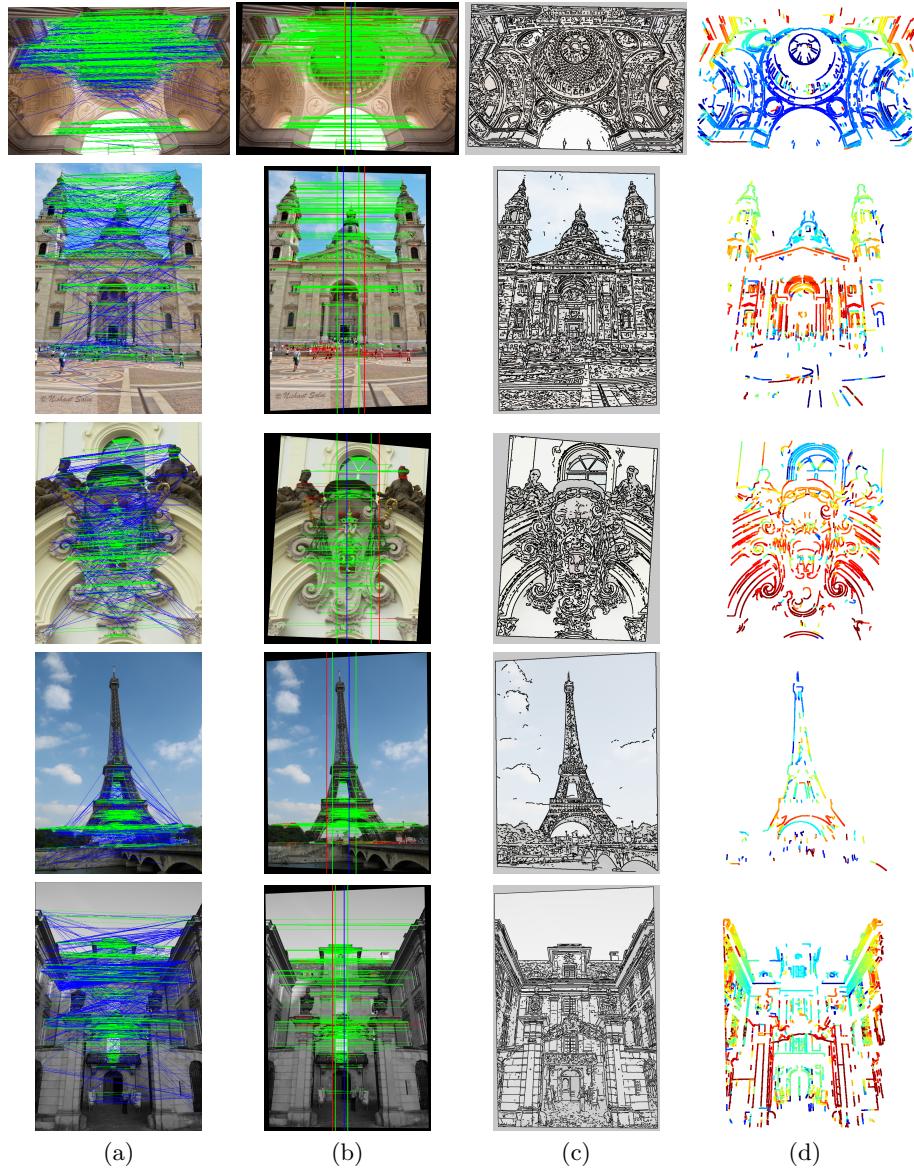


Fig. 1. Some additional results: (a) epipolar geometry from matched points; (b) rectified image with depth range and inlier matches; (c) extracted curves; (d) recovered depths for matched curves.

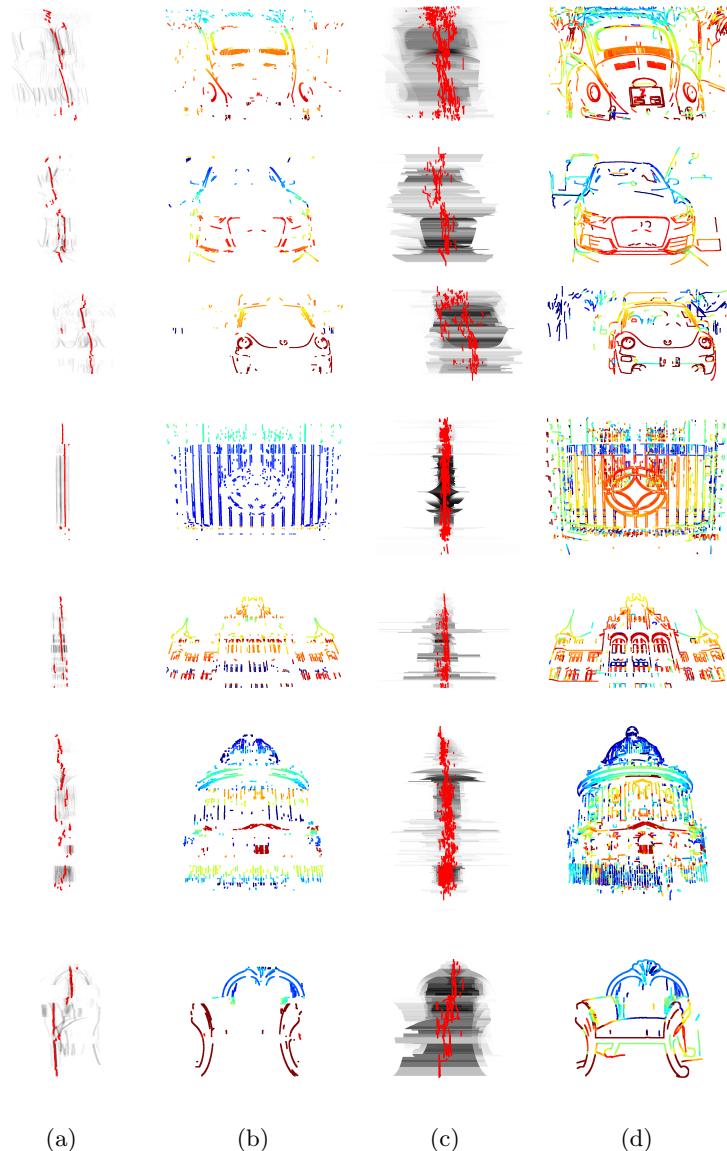


Fig. 2. Curve matching results: (a) cost image generated from all pairs of matching edges with the results of vertical dynamic programming shown in red; (b) the corresponding edge matches, color-coded by depth. (c) the cost image associated with running an intra-scanline dynamic program starting inside each inter-edge interval, along with the dynamic programming solution (red) and the midlines (disparities) for all the matches; (d) the corresponding edge matches.



Fig. 3. Feature matching results across interest point detectors. From the top: EdgeFoci, FAST-ER, FAST-ER+affine distortions, Hessian-Affine, Hessian-Laplace: (a) feature point detections; (b) matches with epipolar inliers; (c) rectified image with disparity range (between the two vertical green lines)



Fig. 4. Feature matching results across interest point detectors. From the top: EdgeFoci, FAST-ER, FAST-ER+affine distortions, Hessian-Affine, Hessian-Laplace: (a) feature point detections; (b) matches with epipolar inliers; (c) rectified image with disparity range (between the two vertical green lines)