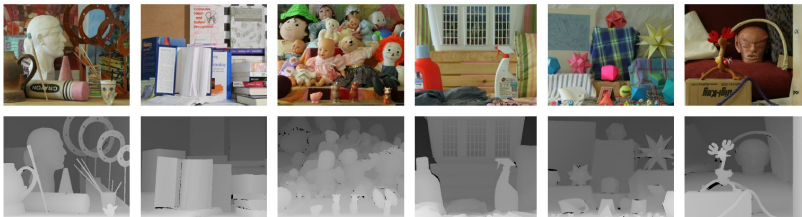


Evaluation of Cost Functions for Stereo Matching

H. Hirschmüller and D. Scharstein (CVPR 2007)



- ▶ Evaluation of the insensitivity of different matching costs with respect to radiometric variations for stereo correspondence methods
- ▶ Pixel-based and window-based variants are considered
- ▶ Sampling-insensitive absolute differences, three filter-based costs, hierarchical mutual information and normalized cross-correlation
- ▶ Measure the performance in the presence of global intensity changes, local intensity changes, and noise
- ▶ Different costs are evaluated with local, semi-global and global stereo methods
- ▶ Using Middlebury stereo dataset with ground-truth disparities and six new datasets taken under controlled changes of exposure and lighting
- ▶ Filter-based costs performed best with local radiometric variations but have blurry edges whereas HMI has sharp edges