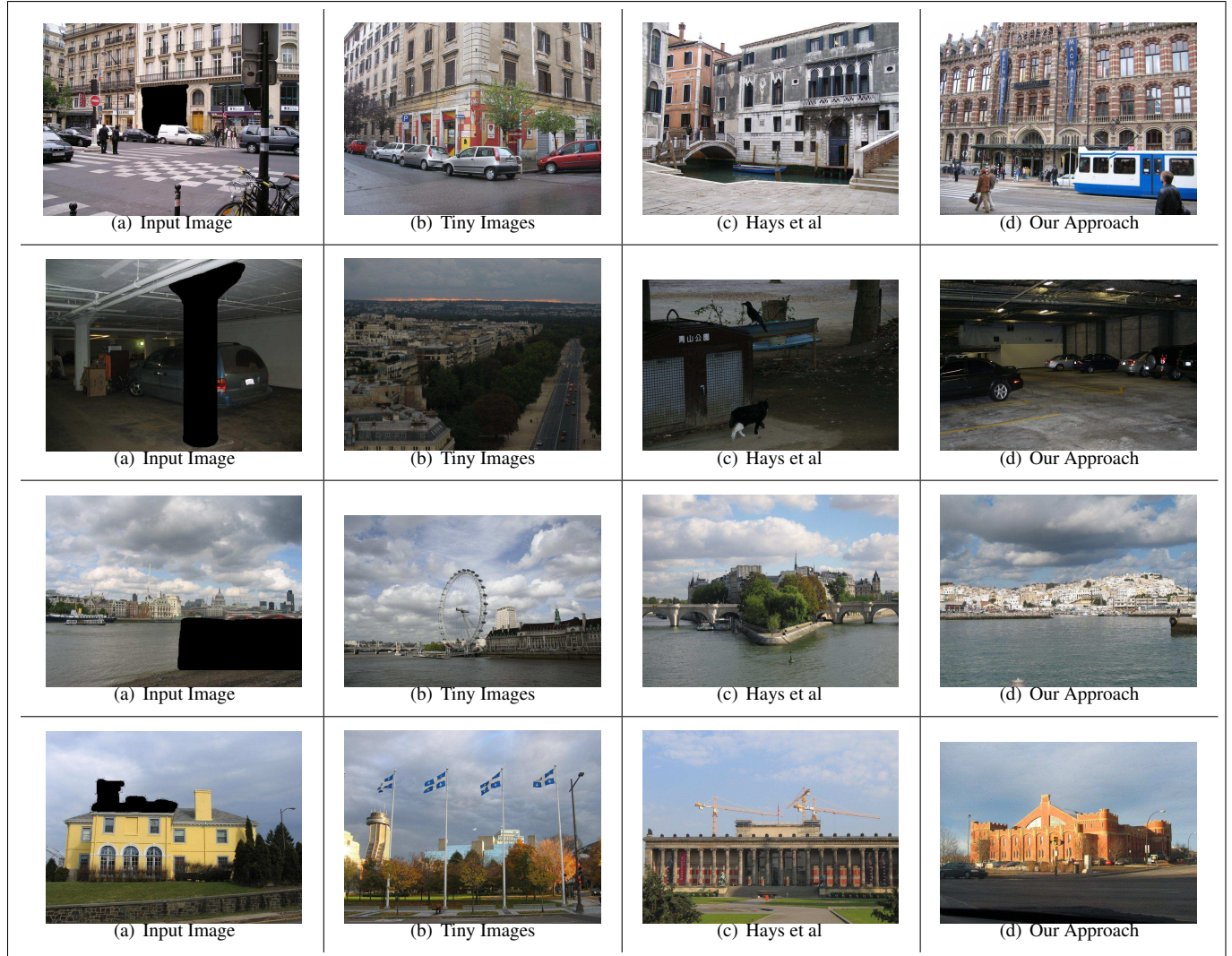


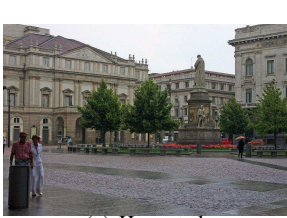
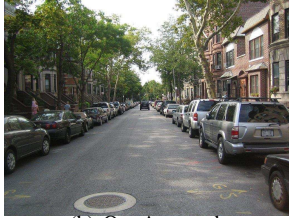
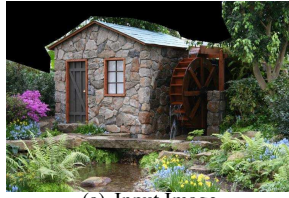
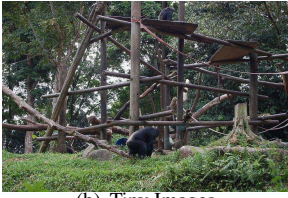
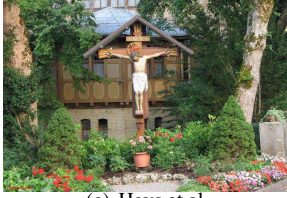
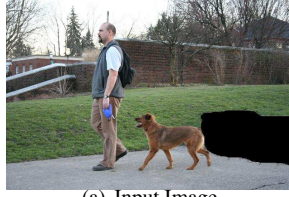
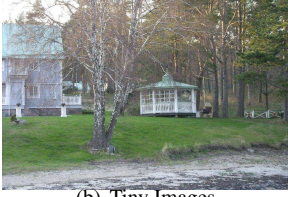
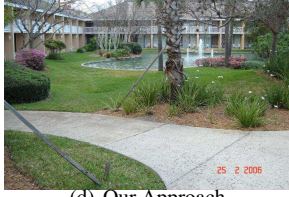
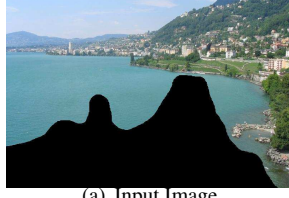
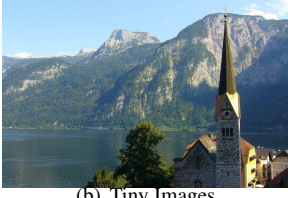
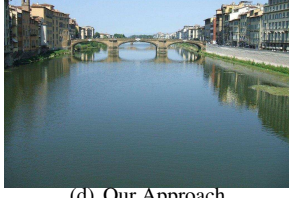
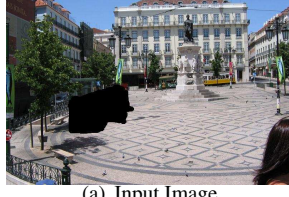
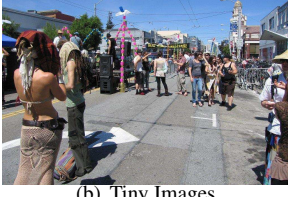
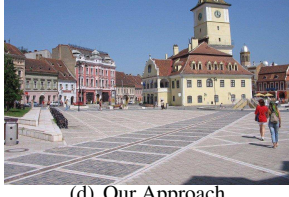
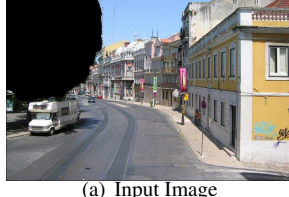
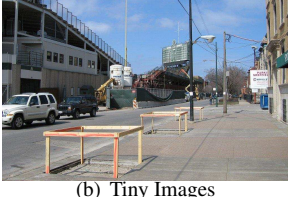
Data-driven Visual Similarity for Cross-domain Image Matching

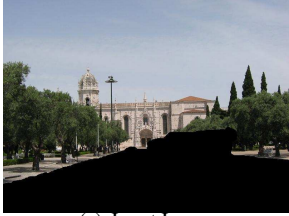
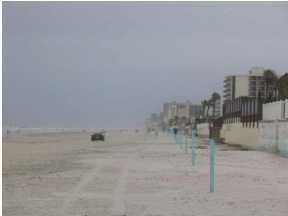
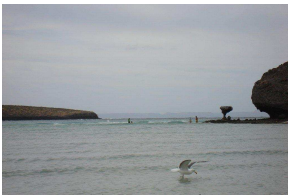
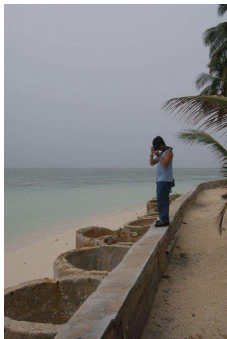
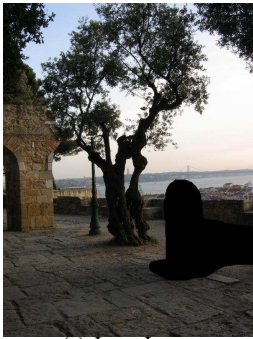
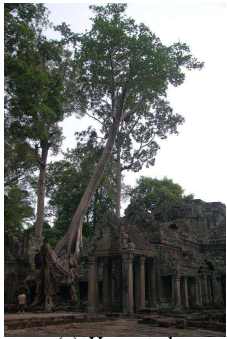
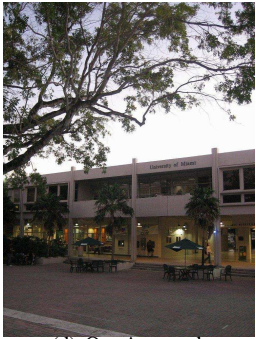
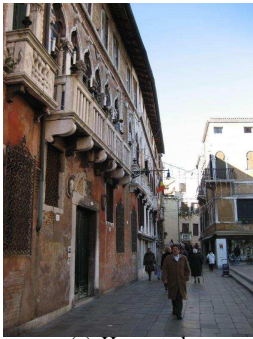
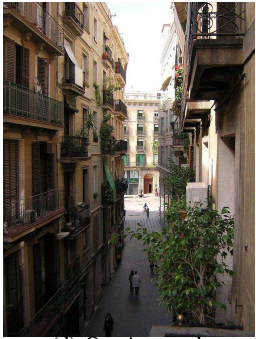
Supplementary Material-I

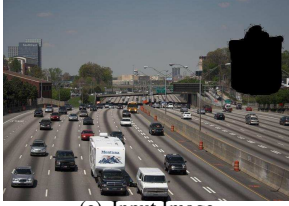
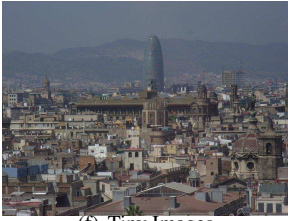
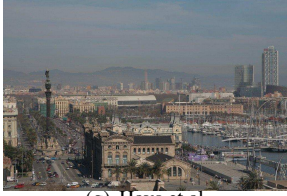
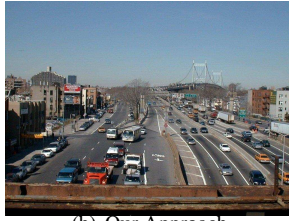
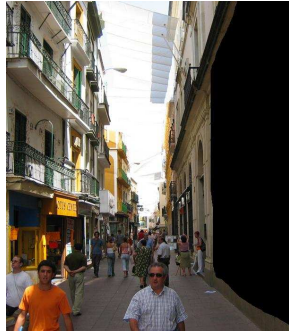
1 Scene Matching

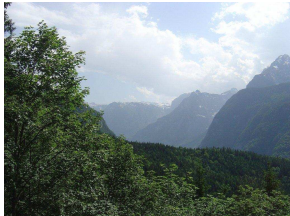
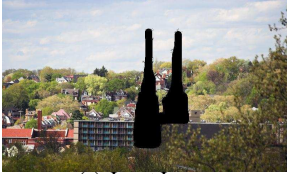
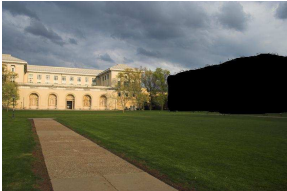
We subjectively compared our approach with tiny images [Torralba et al. 2008] and Hays et al [Hays and Efros 2007] as described in section 3.1 of the submitted paper. Given below are scene matching results for entire dataset of 78 images which were given to the participants of the study.

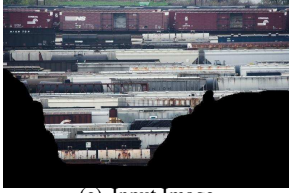
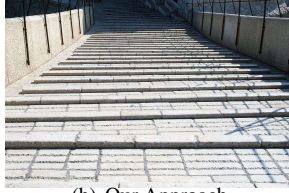
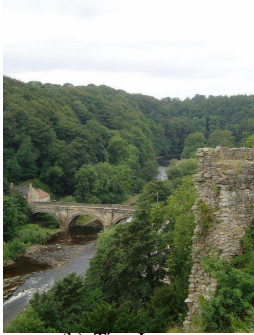
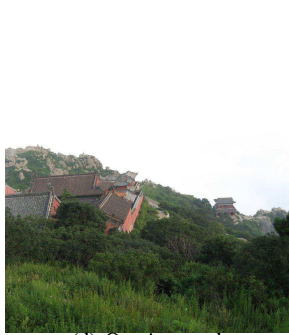
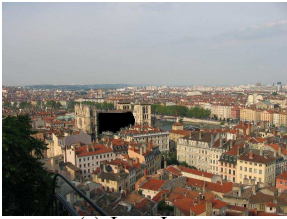
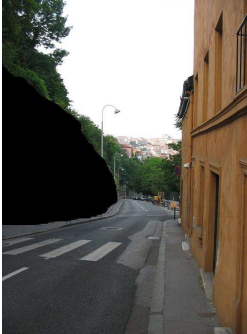
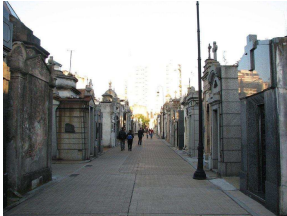
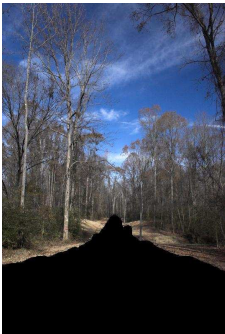
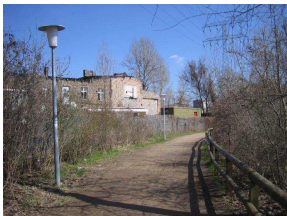


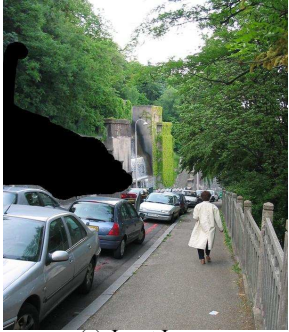
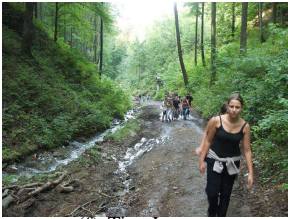
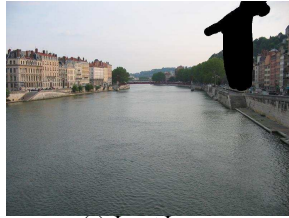
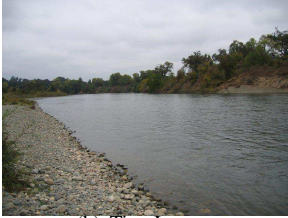
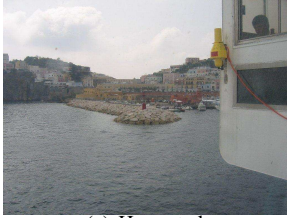
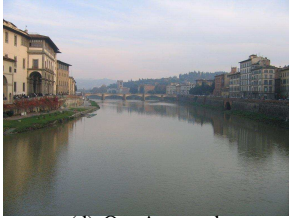
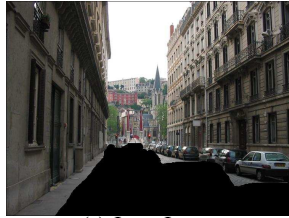
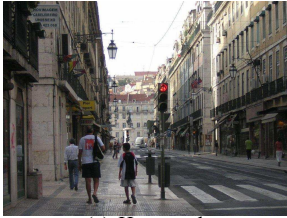
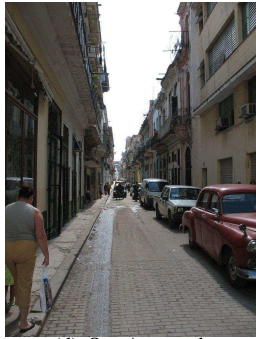
			
(e) Input Image	(f) Tiny Images	(g) Hays et al	(h) Our Approach
			
(a) Input Image	(b) Tiny Images	(c) Hays et al	(d) Our Approach
			
(a) Input Image	(b) Tiny Images	(c) Hays et al	(d) Our Approach
			
(a) Input Image	(b) Tiny Images	(c) Hays et al	(d) Our Approach
			
(a) Input Image	(b) Tiny Images	(c) Hays et al	(d) Our Approach
			
(a) Input Image	(b) Tiny Images	(c) Hays et al	(d) Our Approach

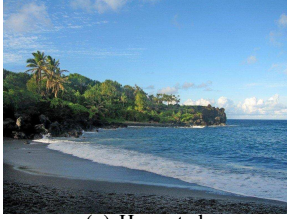
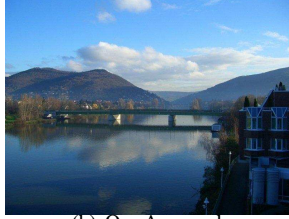
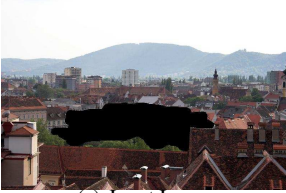
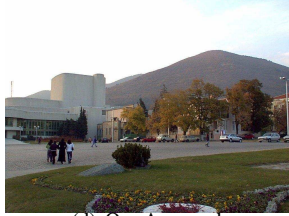
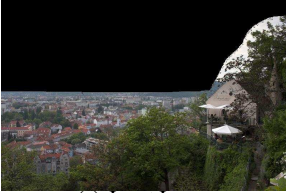
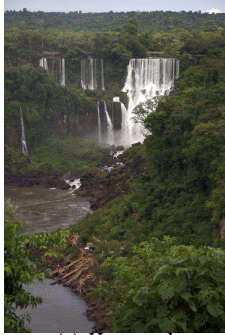
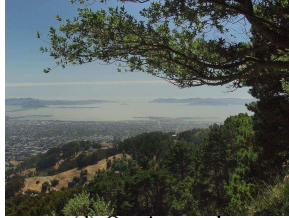
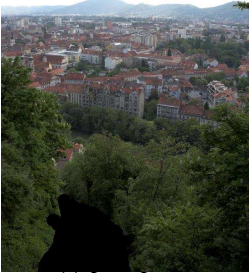
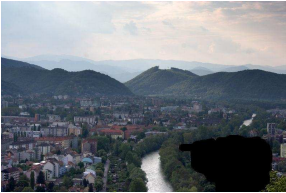
 (e) Input Image	 (f) Tiny Images	 (g) Hays et al	 (h) Our Approach
 (a) Input Image	 (b) Tiny Images	 (c) Hays et al	 (d) Our Approach
 (a) Input Image	 (b) Tiny Images	 (c) Hays et al	 (d) Our Approach
 (a) Input Image	 (b) Tiny Images	 (c) Hays et al	 (d) Our Approach
 (a) Input Image	 (b) Tiny Images	 (c) Hays et al	 (d) Our Approach

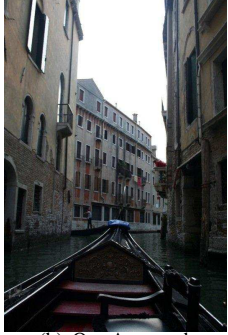
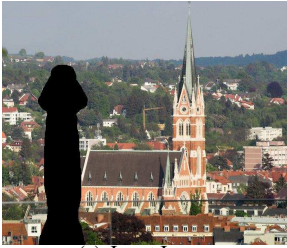
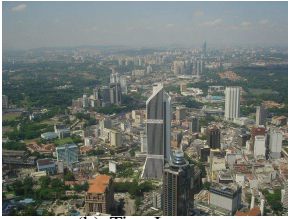
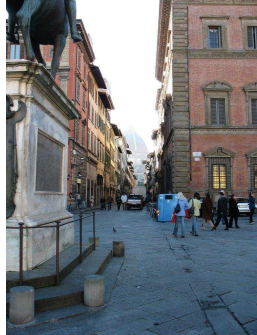
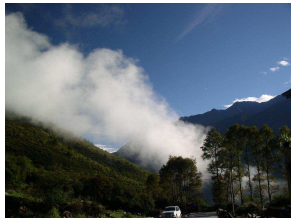
 (e) Input Image	 (f) Tiny Images	 (g) Hays et al	 (h) Our Approach
 (a) Input Image	 (b) Tiny Images	 (c) Hays et al	 (d) Our Approach
 (a) Input Image	 (b) Tiny Images	 (c) Hays et al	 (d) Our Approach
 (a) Input Image	 (b) Tiny Images	 (c) Hays et al	 (d) Our Approach
 (a) Input Image	 (b) Tiny Images	 (c) Hays et al	 (d) Our Approach

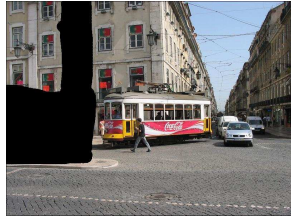
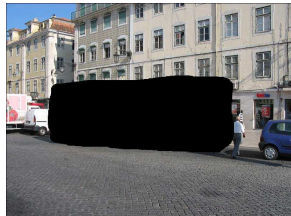
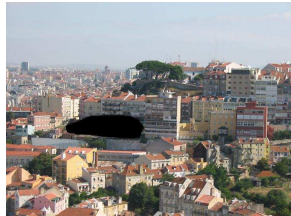
			
			
			
			
			

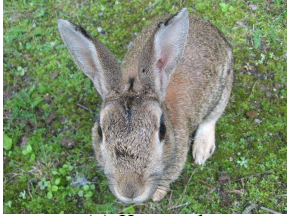
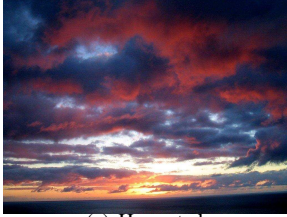
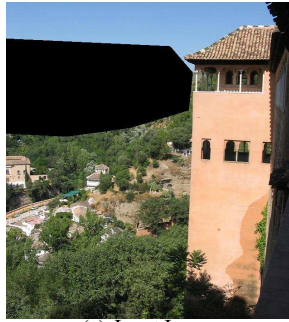
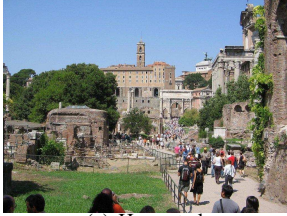
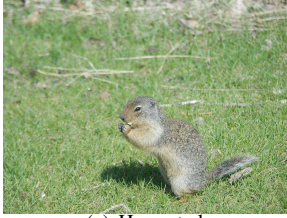
			
(e) Input Image	(f) Tiny Images	(g) Hays et al	(h) Our Approach
			
(a) Input Image	(b) Tiny Images	(c) Hays et al	(d) Our Approach
			
(a) Input Image	(b) Tiny Images	(c) Hays et al	(d) Our Approach
			
(a) Input Image	(b) Tiny Images	(c) Hays et al	(d) Our Approach
			
(a) Input Image	(b) Tiny Images	(c) Hays et al	(d) Our Approach

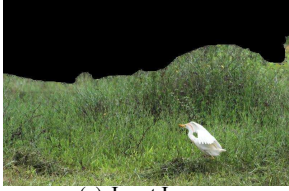
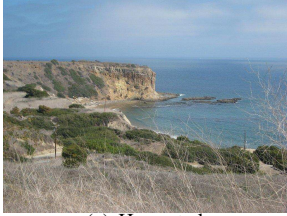
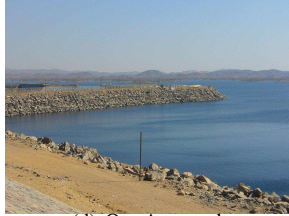
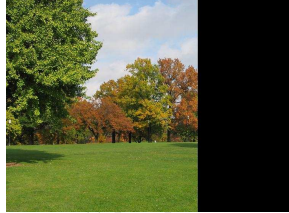
 (e) Input Image	 (f) Tiny Images	 (g) Hays et al	 (h) Our Approach
 (a) Input Image	 (b) Tiny Images	 (c) Hays et al	 (d) Our Approach
 (a) Input Image	 (b) Tiny Images	 (c) Hays et al	 (d) Our Approach
 (a) Input Image	 (b) Tiny Images	 (c) Hays et al	 (d) Our Approach
 (a) Input Image	 (b) Tiny Images	 (c) Hays et al	 (d) Our Approach

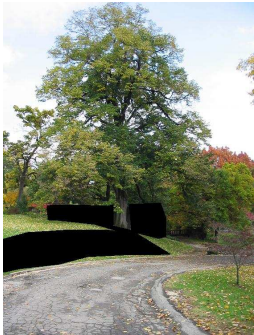
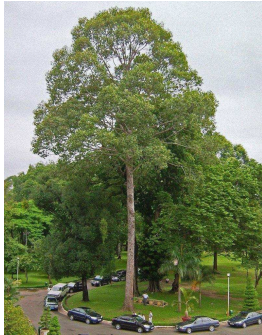
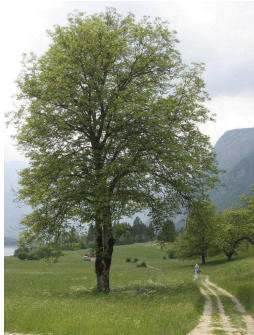
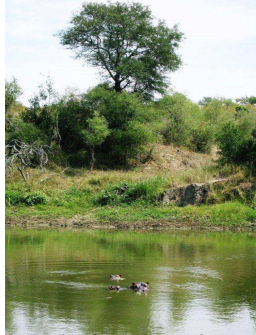
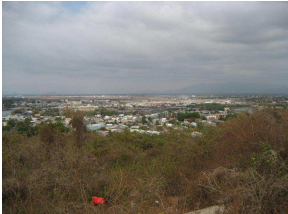
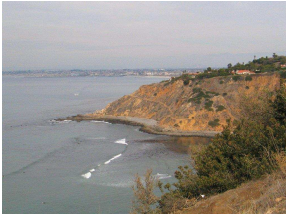
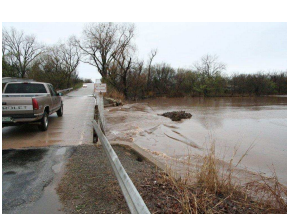
 (e) Input Image	 (f) Tiny Images	 (g) Hays et al	 (h) Our Approach
 (a) Input Image	 (b) Tiny Images	 (c) Hays et al	 (d) Our Approach
 (a) Input Image	 (b) Tiny Images	 (c) Hays et al	 (d) Our Approach
 (a) Input Image	 (b) Tiny Images	 (c) Hays et al	 (d) Our Approach
 (a) Input Image	 (b) Tiny Images	 (c) Hays et al	 (d) Our Approach

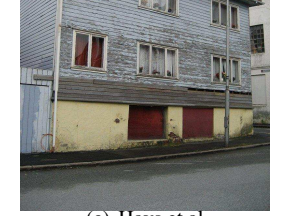
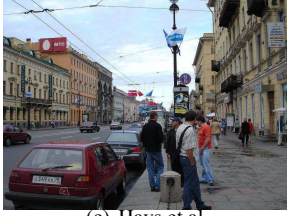
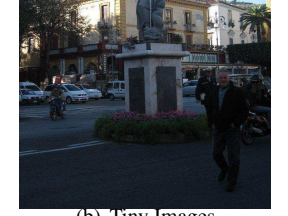
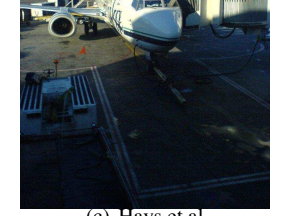
			
			
			
			
			

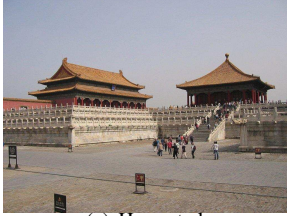
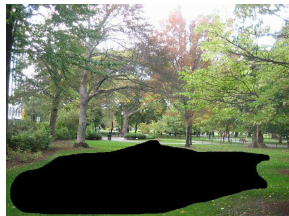
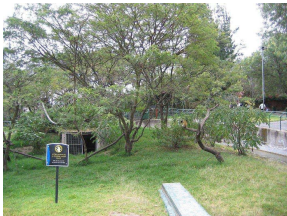
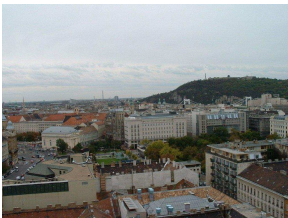
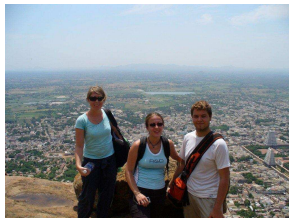
			
(e) Input Image	(f) Tiny Images	(g) Hays et al	(h) Our Approach
			
(a) Input Image	(b) Tiny Images	(c) Hays et al	(d) Our Approach
			
(a) Input Image	(b) Tiny Images	(c) Hays et al	(d) Our Approach
			
(a) Input Image	(b) Tiny Images	(c) Hays et al	(d) Our Approach
			
(a) Input Image	(b) Tiny Images	(c) Hays et al	(d) Our Approach

 (e) Input Image	 (f) Tiny Images	 (g) Hays et al	 (h) Our Approach
 (a) Input Image	 (b) Tiny Images	 (c) Hays et al	 (d) Our Approach
 (a) Input Image	 (b) Tiny Images	 (c) Hays et al	 (d) Our Approach
 (a) Input Image	 (b) Tiny Images	 (c) Hays et al	 (d) Our Approach
 (a) Input Image	 (b) Tiny Images	 (c) Hays et al	 (d) Our Approach

 (e) Input Image	 (f) Tiny Images	 (g) Hays et al	 (h) Our Approach
 (a) Input Image	 (b) Tiny Images	 (c) Hays et al	 (d) Our Approach
 (a) Input Image	 (b) Tiny Images	 (c) Hays et al	 (d) Our Approach
 (a) Input Image	 (b) Tiny Images	 (c) Hays et al	 (d) Our Approach
 (a) Input Image	 (b) Tiny Images	 (c) Hays et al	 (d) Our Approach

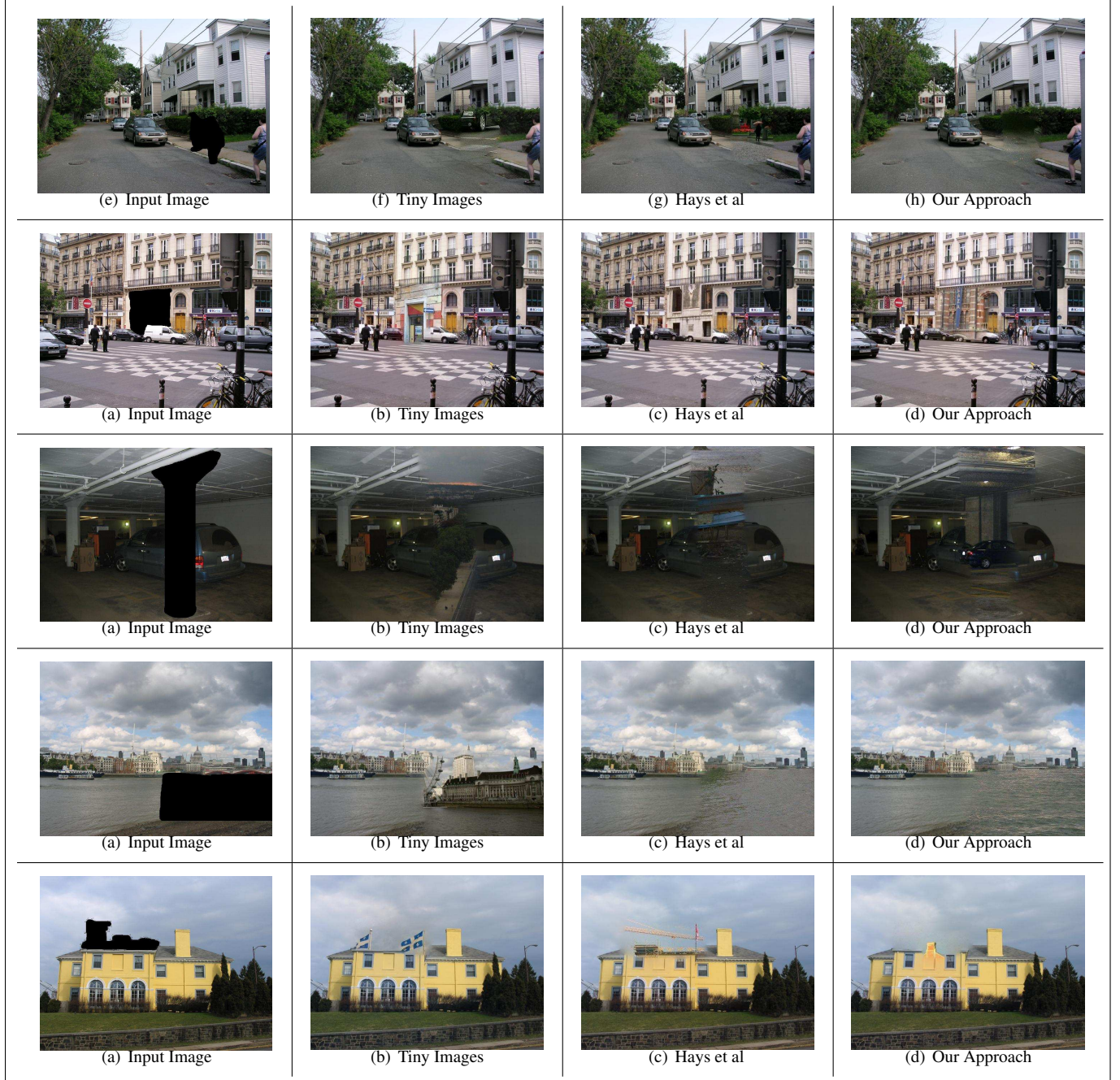
			
(e) Input Image	(f) Tiny Images	(g) Hays et al	(h) Our Approach
			
(a) Input Image	(b) Tiny Images	(c) Hays et al	(d) Our Approach
			
(a) Input Image	(b) Tiny Images	(c) Hays et al	(d) Our Approach
			
(a) Input Image	(b) Tiny Images	(c) Hays et al	(d) Our Approach
			
(a) Input Image	(b) Tiny Images	(c) Hays et al	(d) Our Approach

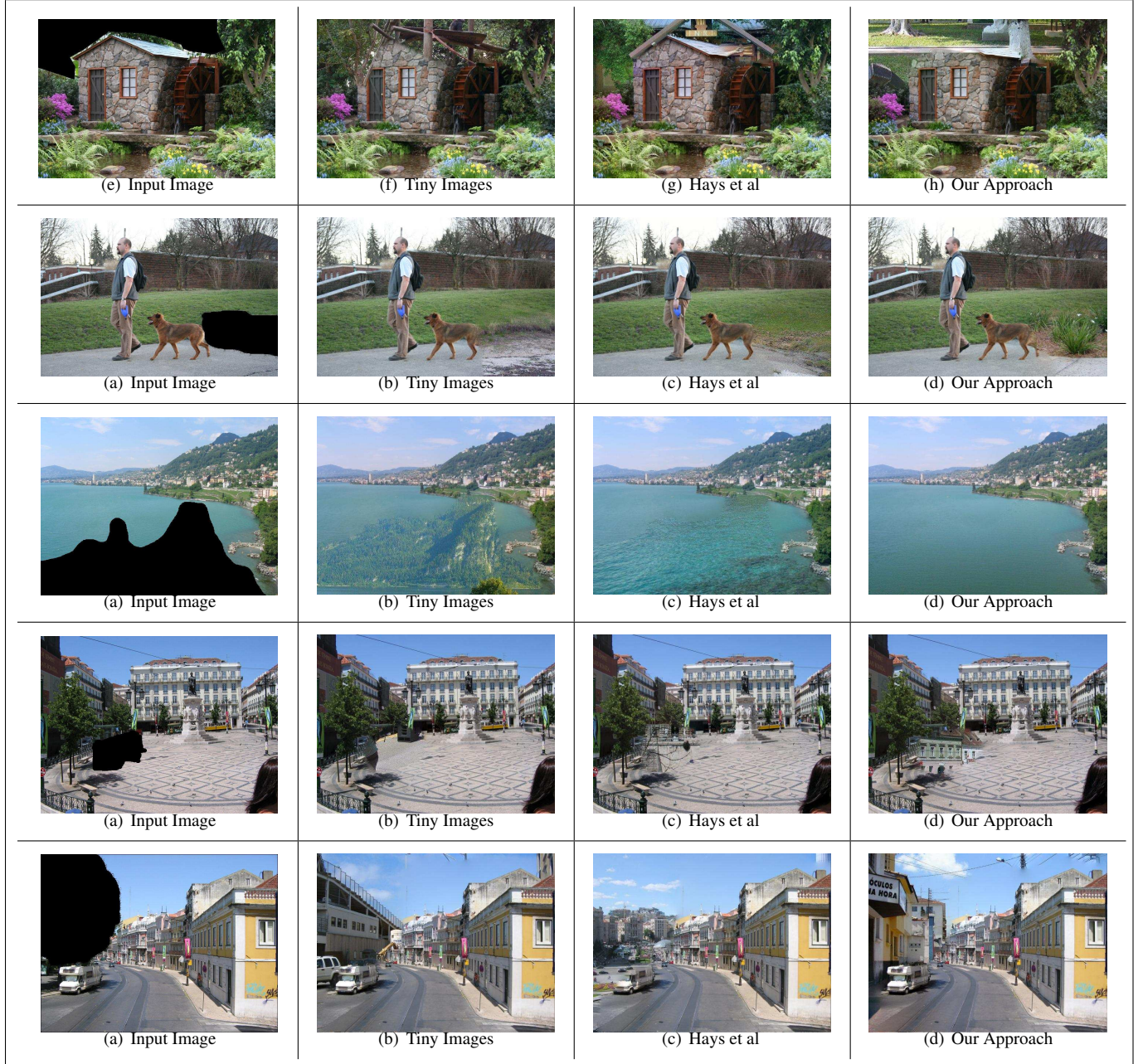
			
(e) Input Image	(f) Tiny Images	(g) Hays et al	(h) Our Approach
			
(a) Input Image	(b) Tiny Images	(c) Hays et al	(d) Our Approach
			
(a) Input Image	(b) Tiny Images	(c) Hays et al	(d) Our Approach
			
(a) Input Image	(b) Tiny Images	(c) Hays et al	(d) Our Approach
			
(a) Input Image	(b) Tiny Images	(c) Hays et al	(d) Our Approach

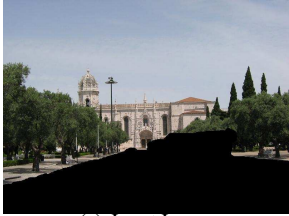
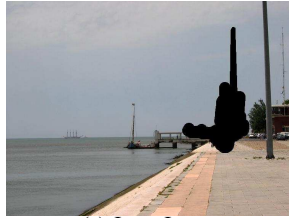
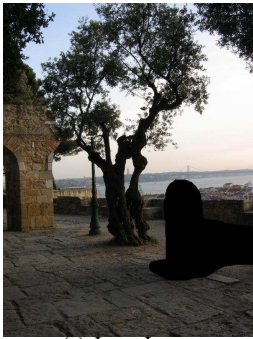
			
(e) Input Image	(f) Tiny Images	(g) Hays et al	(h) Our Approach
			
(a) Input Image	(b) Tiny Images	(c) Hays et al	(d) Our Approach
			
(a) Input Image	(b) Tiny Images	(c) Hays et al	(d) Our Approach
			
(a) Input Image	(b) Tiny Images	(c) Hays et al	(d) Our Approach
			
(a) Input Image	(b) Tiny Images	(c) Hays et al	(d) Our Approach

2 Scene Completion

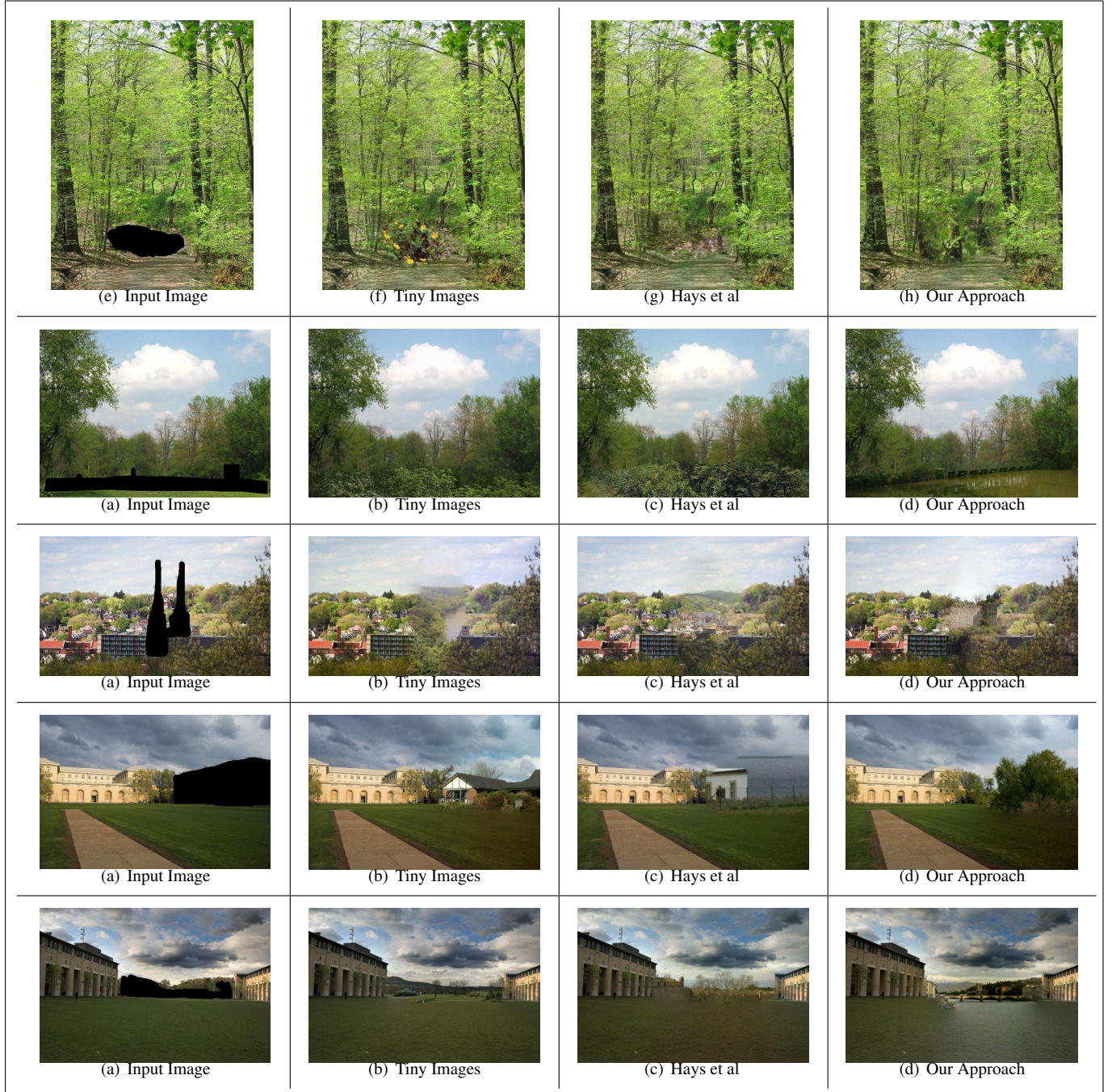
We filled the hole in input image automatically using first top match of all three algorithms (see section 3.1). Participants of the subjective study were required to select the most compelling/convincing scene completion. Note that Hays et al [Hays and Efros 2007] fill using their top 20 matches and ask users to select the best match. However, for this evaluation, we automatically select the first top match, to compare the quality of top scene match results. Given below are scene completion results for entire dataset of 78 images which were given to the participants of the study.

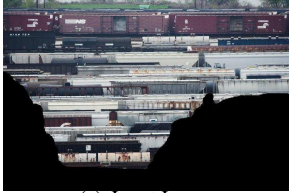
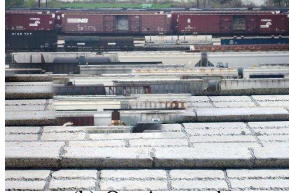
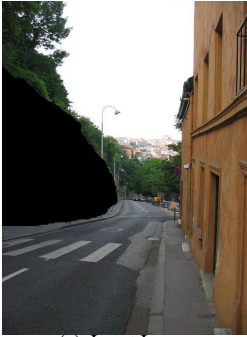
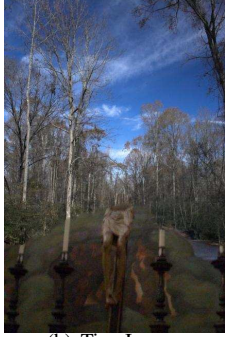
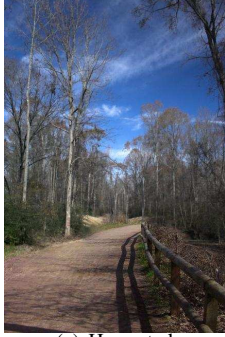
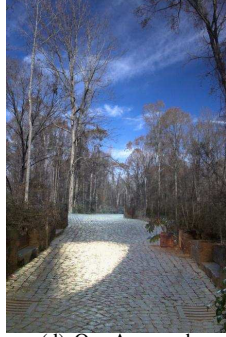




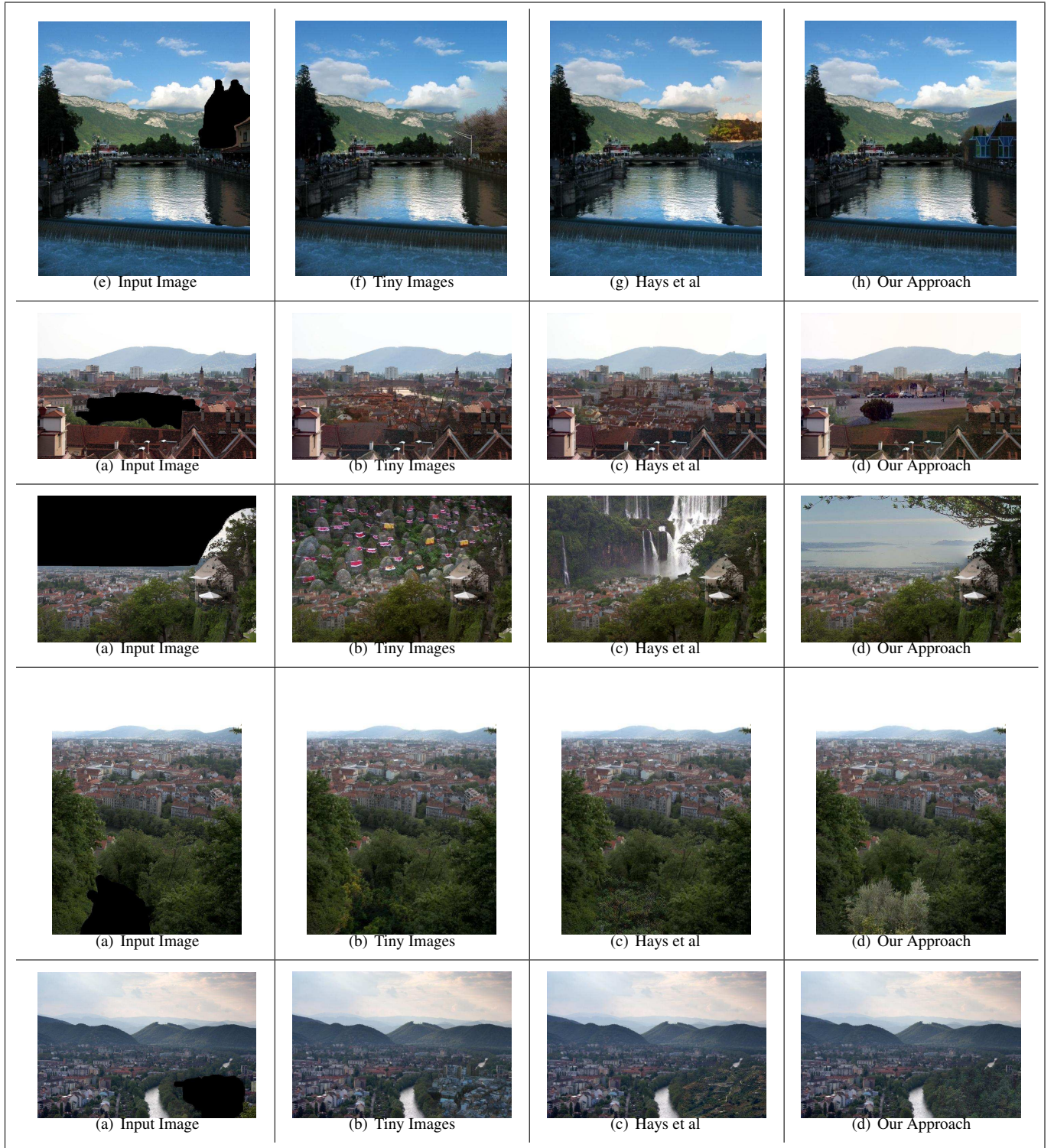
			
(e) Input Image	(f) Tiny Images	(g) Hays et al	(h) Our Approach
			
(a) Input Image	(b) Tiny Images	(c) Hays et al	(d) Our Approach
			
(a) Input Image	(b) Tiny Images	(c) Hays et al	(d) Our Approach
			
(a) Input Image	(b) Tiny Images	(c) Hays et al	(d) Our Approach
			
(a) Input Image	(b) Tiny Images	(c) Hays et al	(d) Our Approach

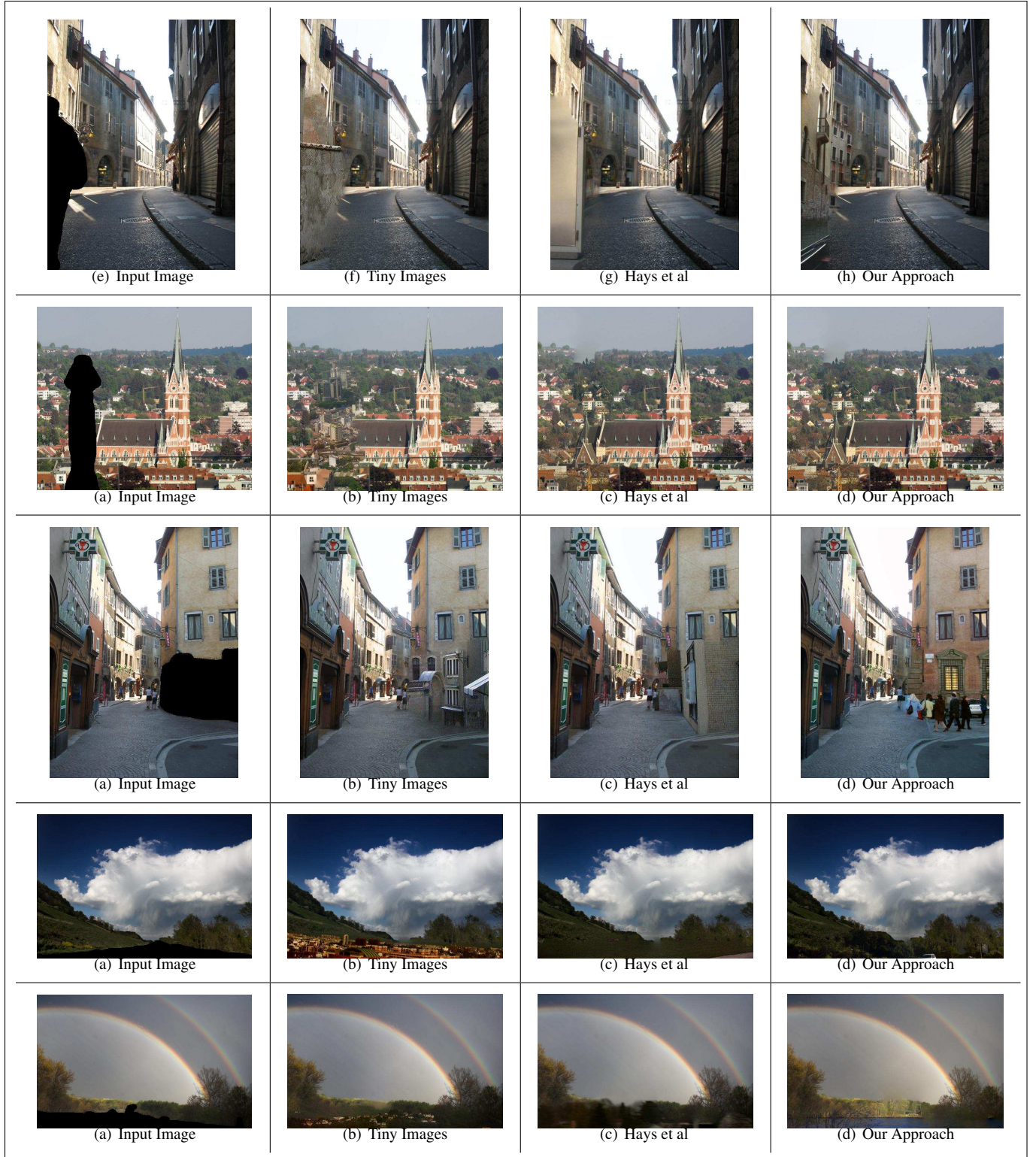


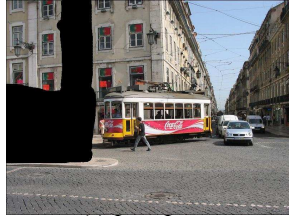
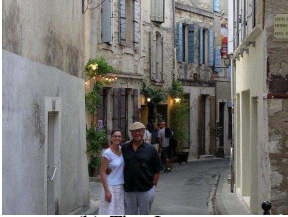
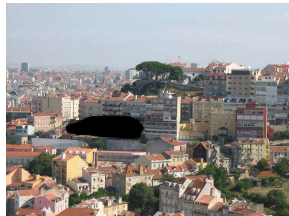


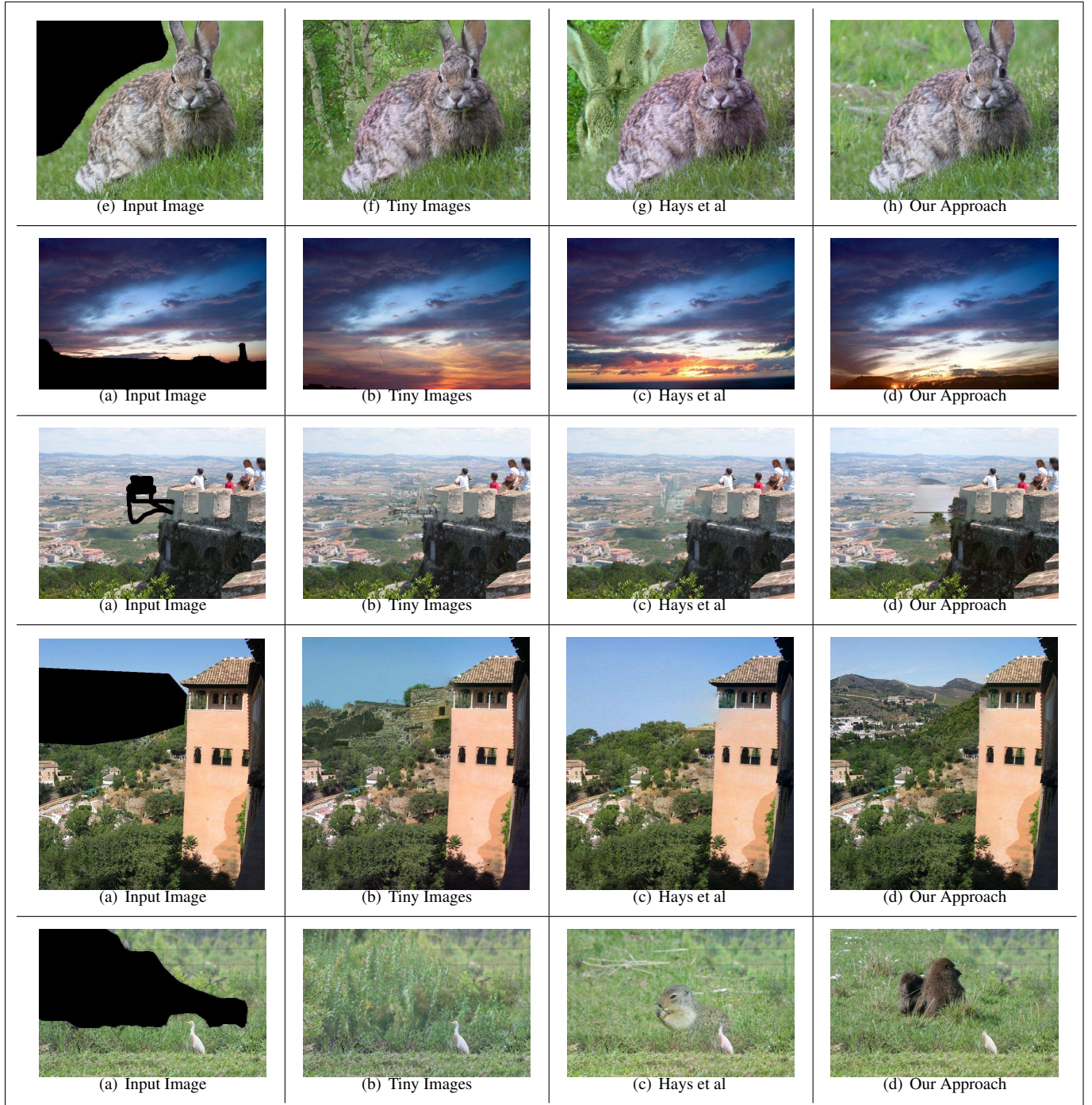
			
(e) Input Image	(f) Tiny Images	(g) Hays et al	(h) Our Approach
			
(a) Input Image	(b) Tiny Images	(c) Hays et al	(d) Our Approach
			
(a) Input Image	(b) Tiny Images	(c) Hays et al	(d) Our Approach
			
(a) Input Image	(b) Tiny Images	(c) Hays et al	(d) Our Approach
			
(a) Input Image	(b) Tiny Images	(c) Hays et al	(d) Our Approach

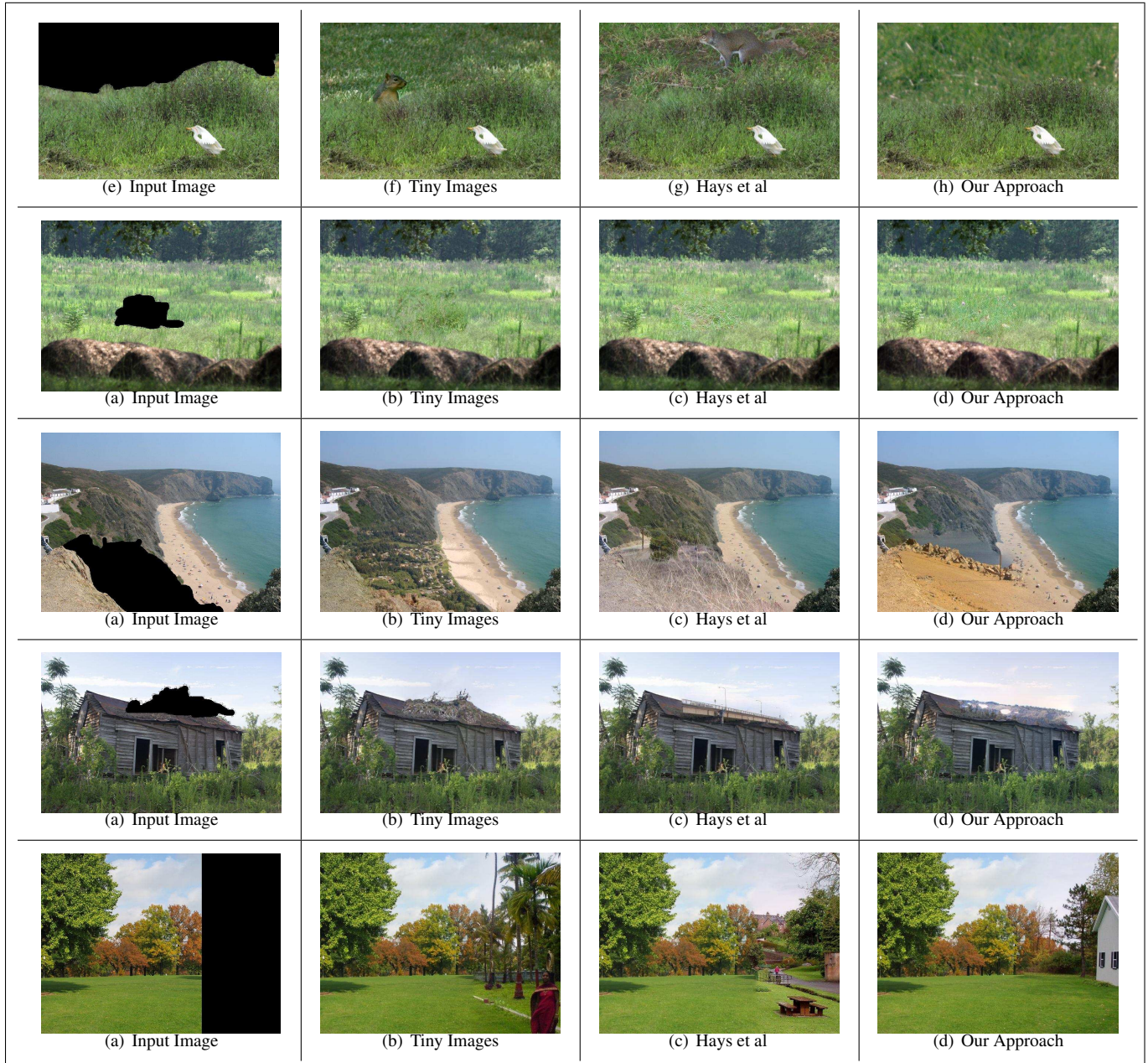




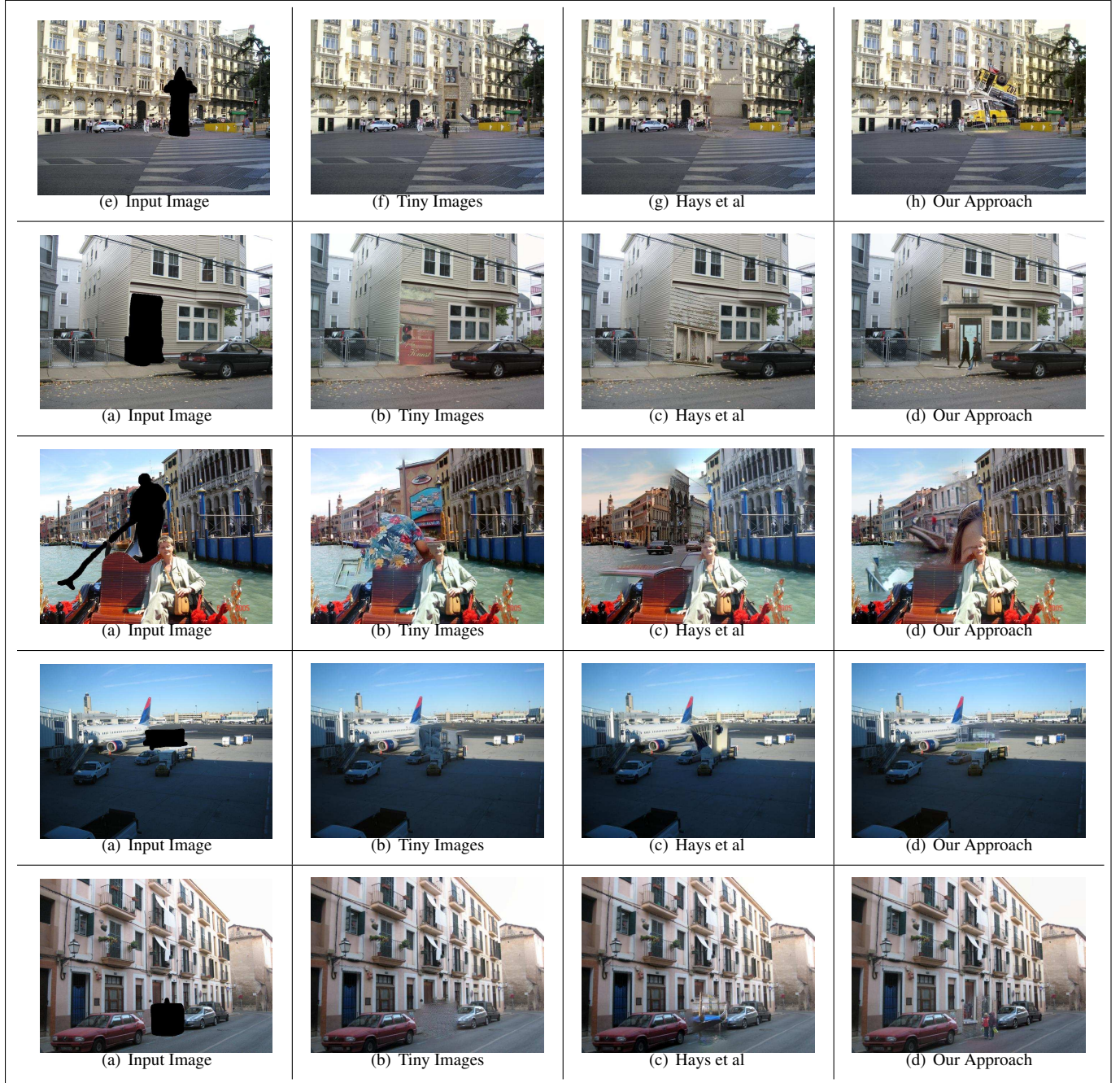


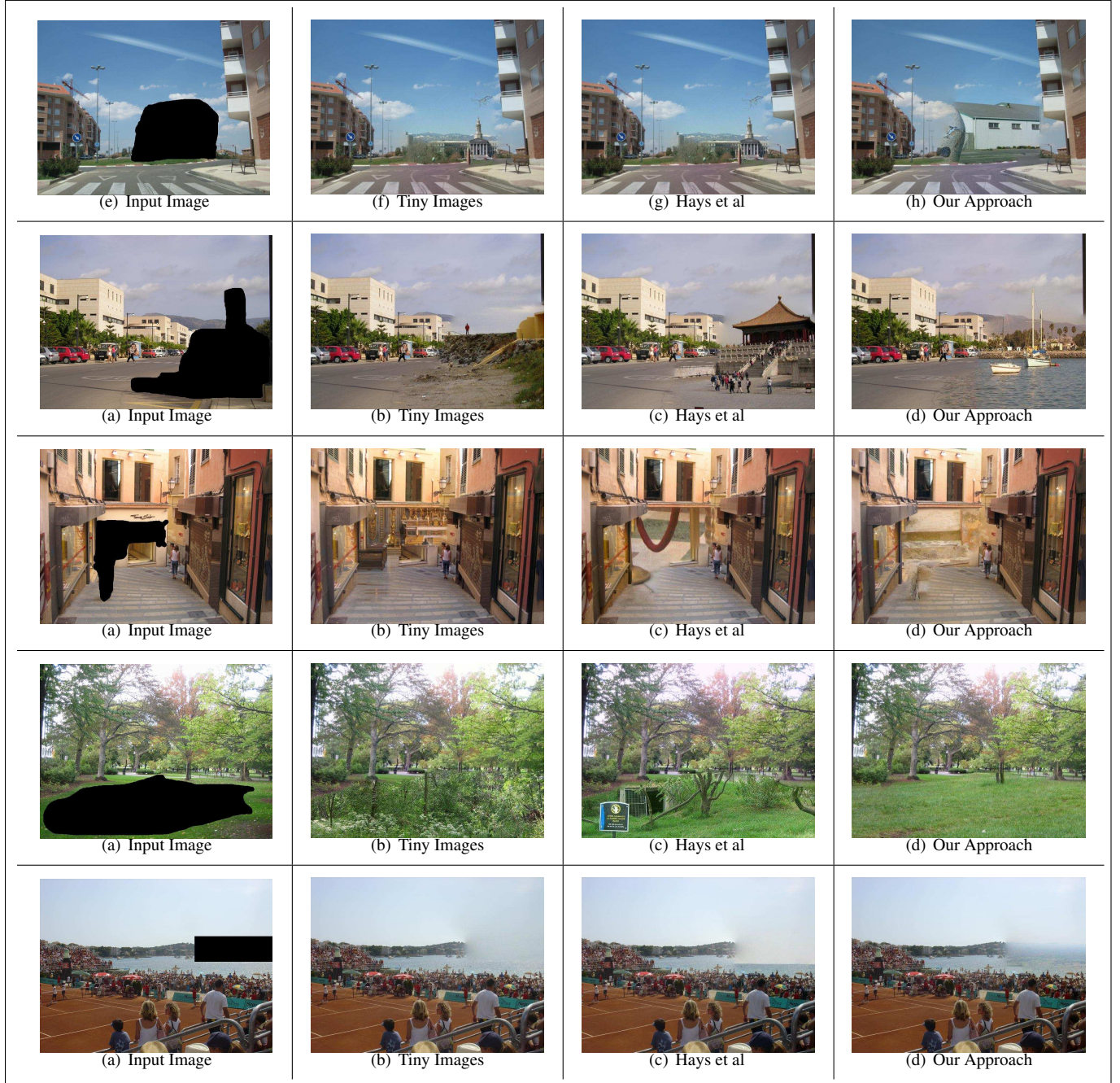
			
(e) Input Image	(f) Tiny Images	(g) Hays et al	(h) Our Approach
			
(a) Input Image	(b) Tiny Images	(c) Hays et al	(d) Our Approach
			
(a) Input Image	(b) Tiny Images	(c) Hays et al	(d) Our Approach
			
(a) Input Image	(b) Tiny Images	(c) Hays et al	(d) Our Approach
			
(a) Input Image	(b) Tiny Images	(c) Hays et al	(d) Our Approach





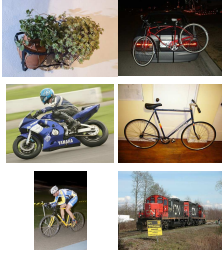
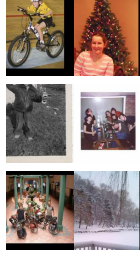
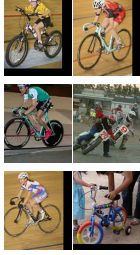
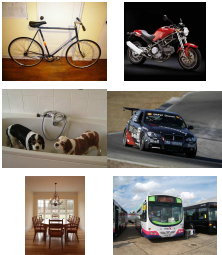
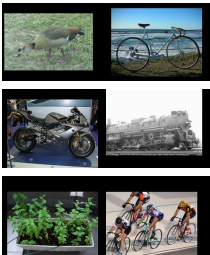
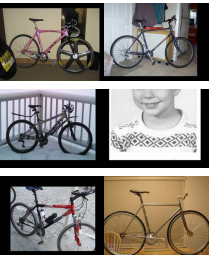
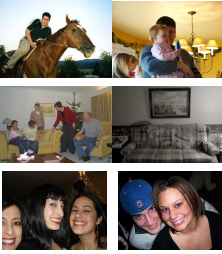
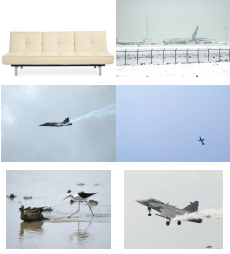
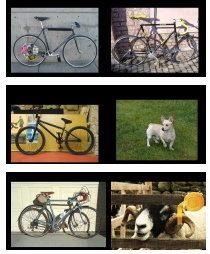
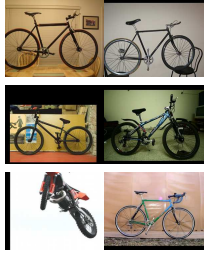
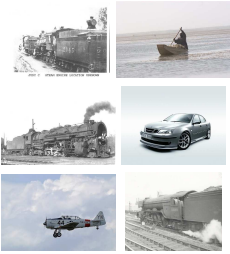
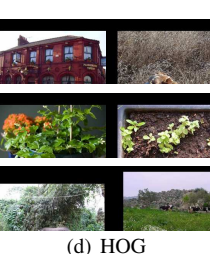
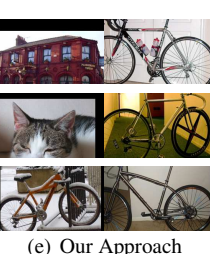
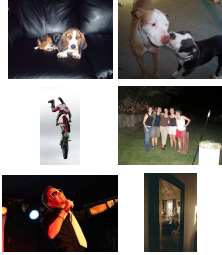
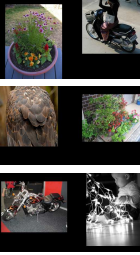
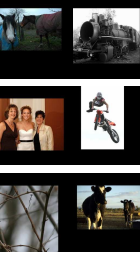


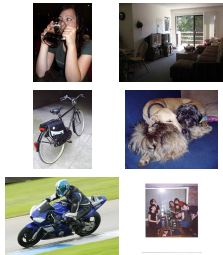
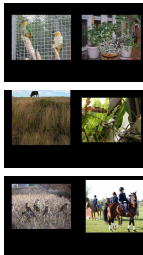
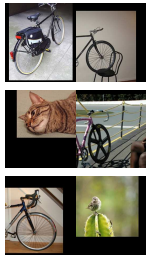
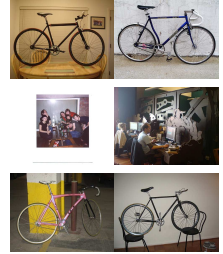
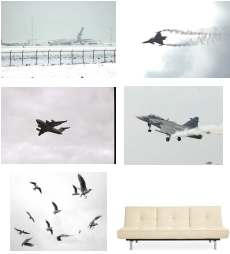
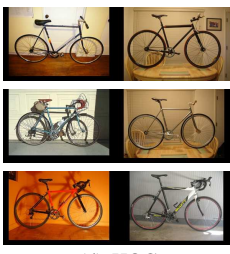
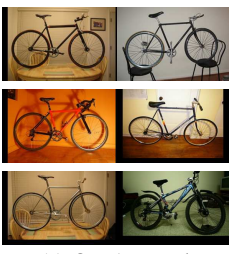
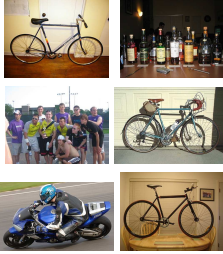
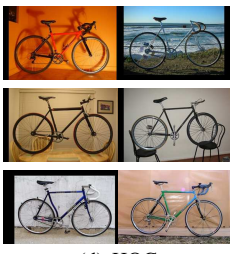
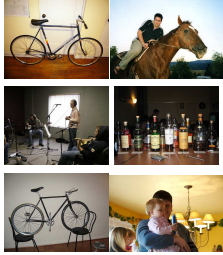
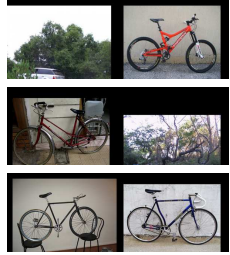
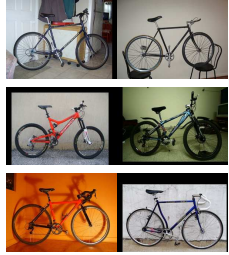
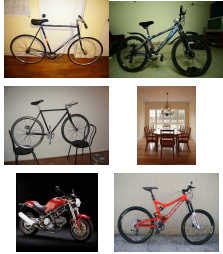
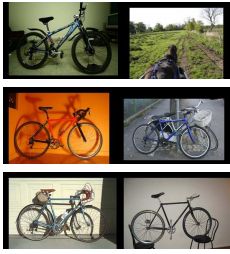
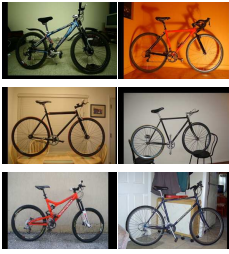


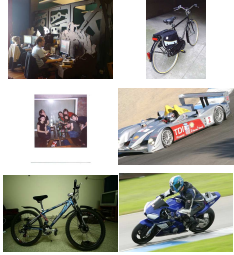
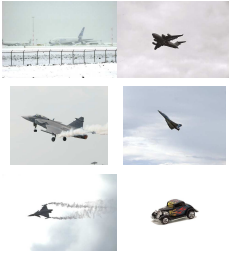
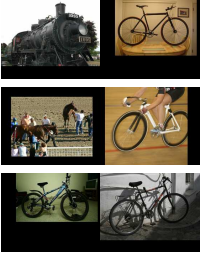
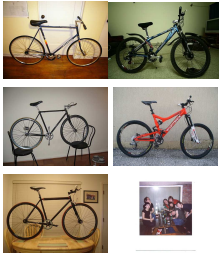
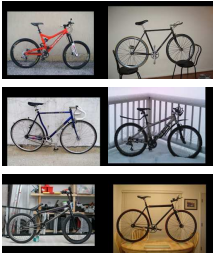
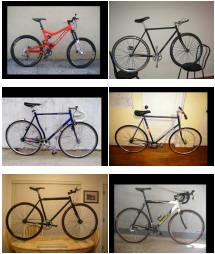
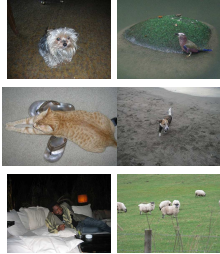
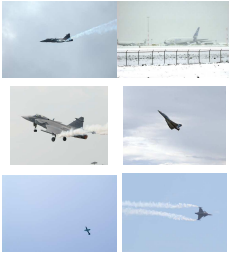
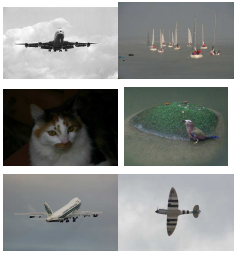
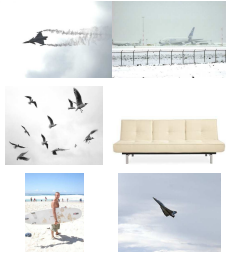
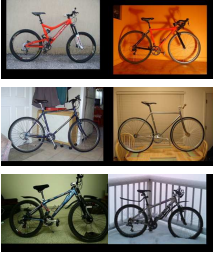
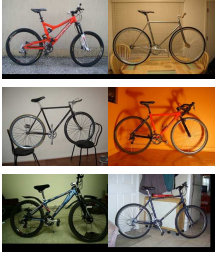
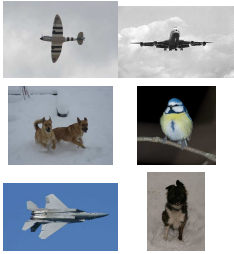
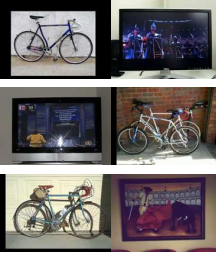


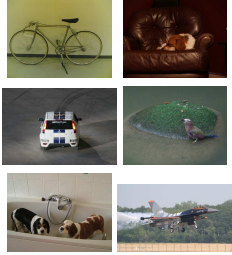
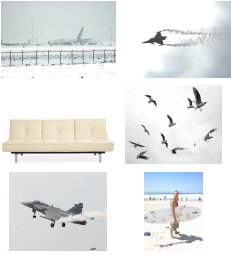
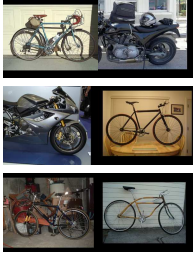
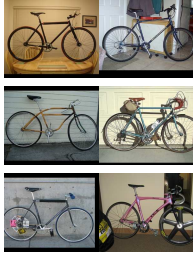
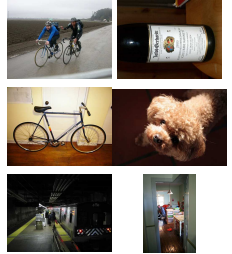
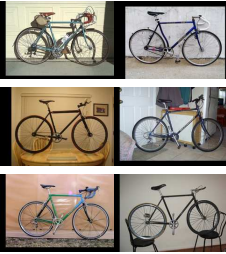
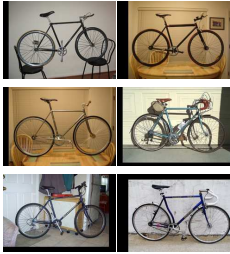
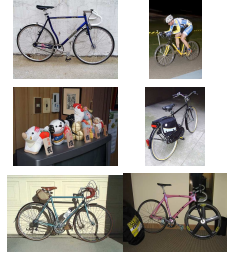
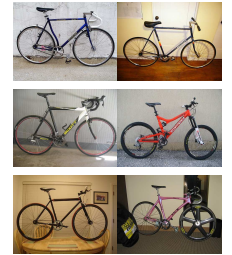
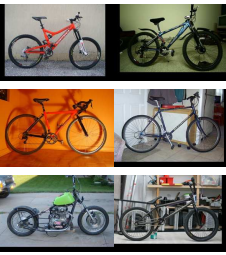
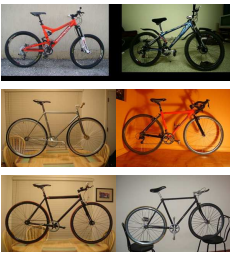
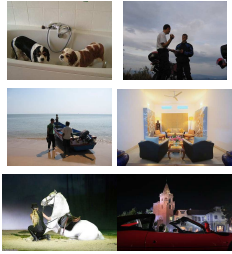
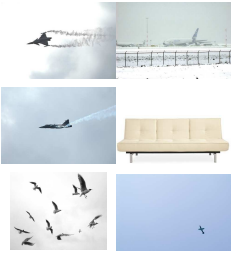
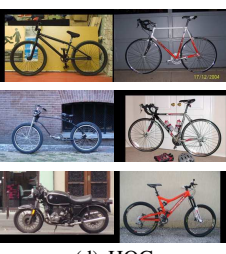
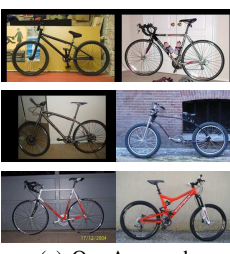
3 Sketch Based Image Retrieval

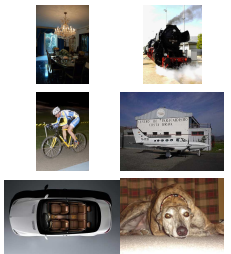
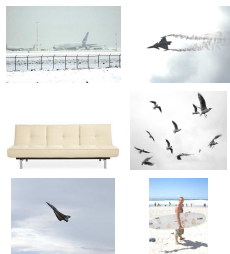
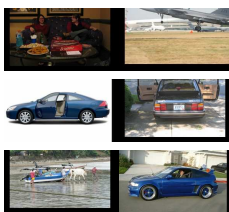
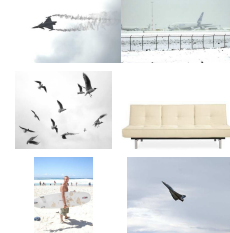
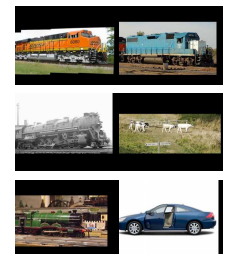
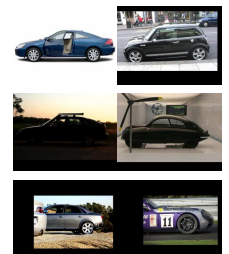
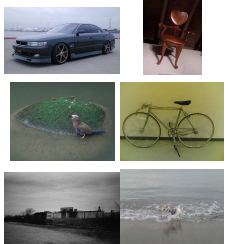
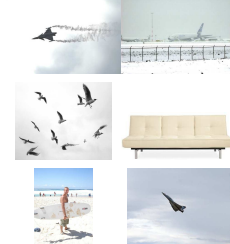
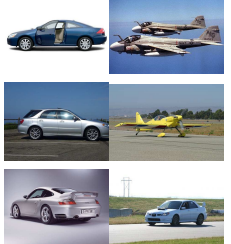
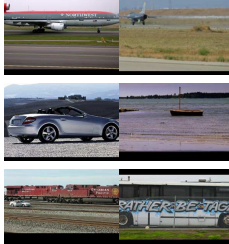
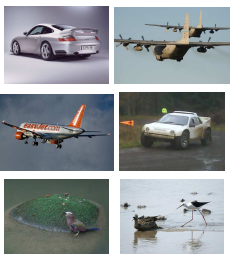
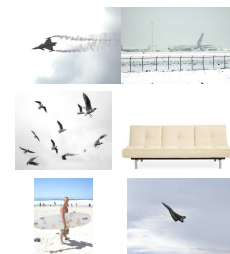
Exhaustive retrieval results for a large subset of query sketch dataset that we collected, on VOC 2007 dataset are given below. As mentioned in section 3.3, we also compare it with uniform-weighted HOG [Dalal and Triggs 2005], GIST [Oliva and Torralba 2006] and Tiny Images [Torralba et al. 2008].

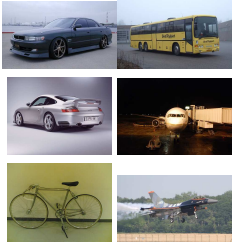
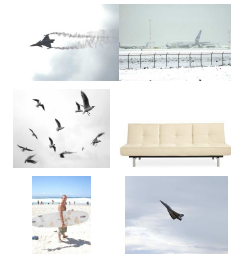
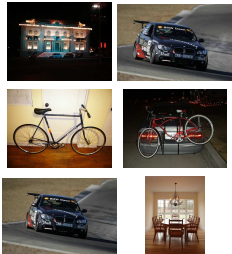
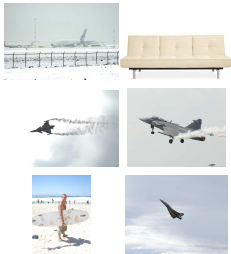
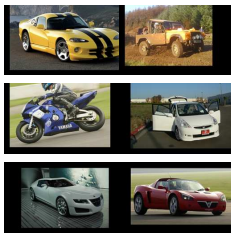
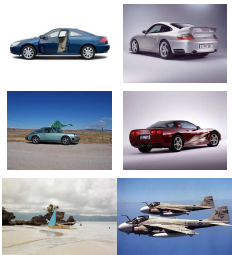
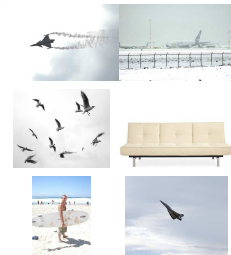
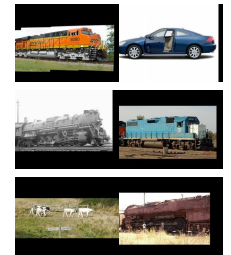
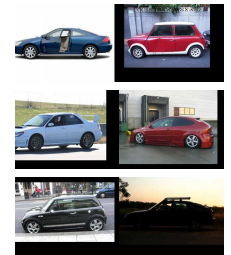
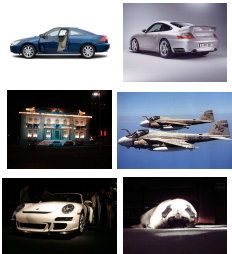
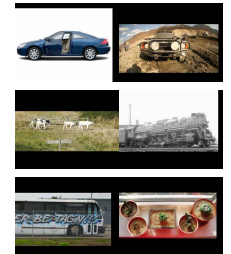
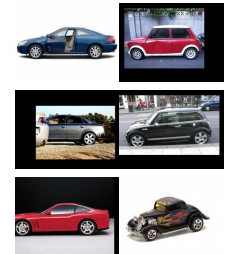
				
(e) Query	(f) Gist	(g) Tiny Images	(h) HOG	(i) Our Approach
				
(a) Query	(b) Gist	(c) Tiny Images	(d) HOG	(e) Our Approach
				
(a) Query	(b) Gist	(c) Tiny Images	(d) HOG	(e) Our Approach
				
(a) Query	(b) Gist	(c) Tiny Images	(d) HOG	(e) Our Approach
				
(a) Query	(b) Gist	(c) Tiny Images	(d) HOG	(e) Our Approach

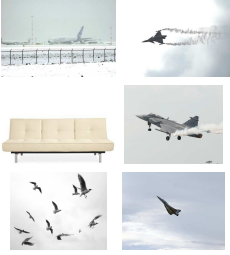
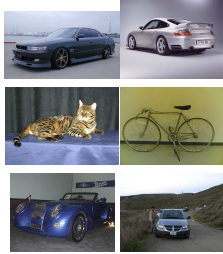
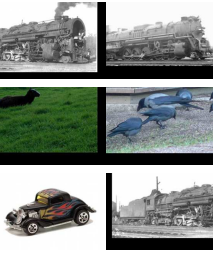
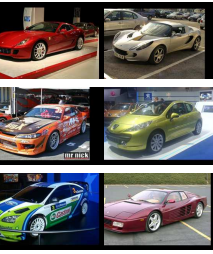
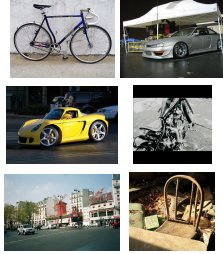
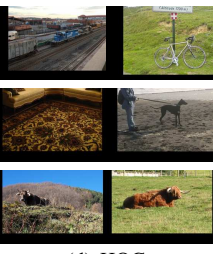
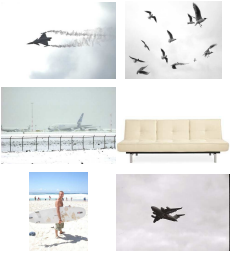
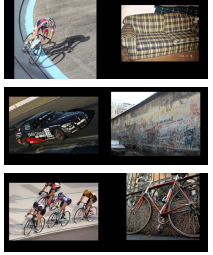
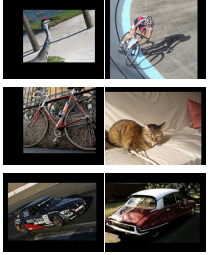
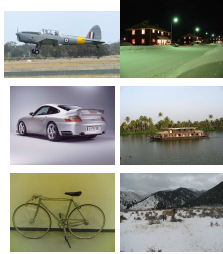
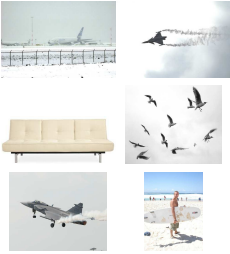
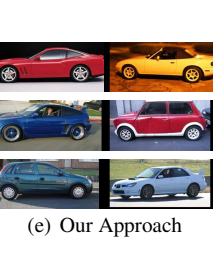
 (f) Query	 (g) Gist	 (h) Tiny Images	 (i) HOG	 (j) Our Approach
 (a) Query	 (b) Gist	 (c) Tiny Images	 (d) HOG	 (e) Our Approach
 (a) Query	 (b) Gist	 (c) Tiny Images	 (d) HOG	 (e) Our Approach
 (a) Query	 (b) Gist	 (c) Tiny Images	 (d) HOG	 (e) Our Approach
 (a) Query	 (b) Gist	 (c) Tiny Images	 (d) HOG	 (e) Our Approach

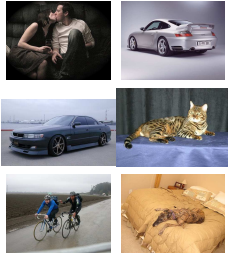
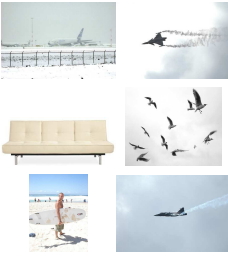
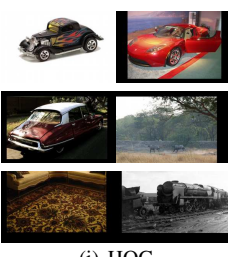
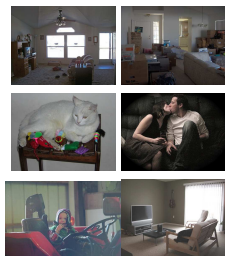
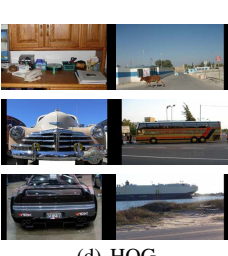
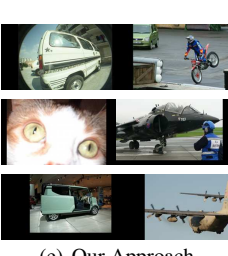
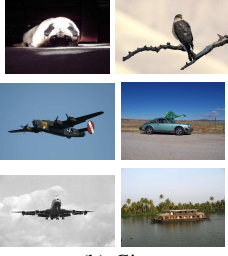
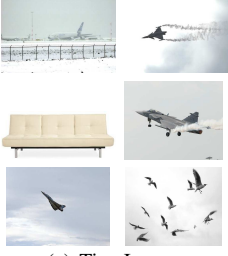
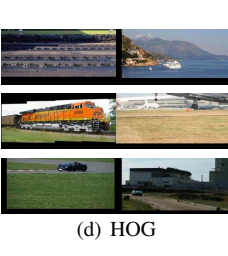
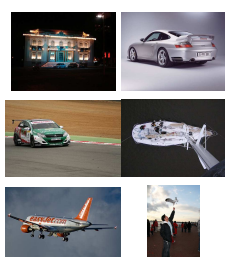
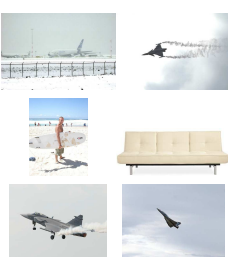
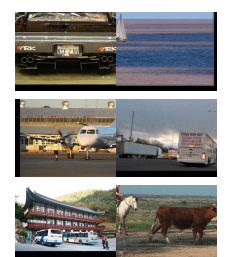
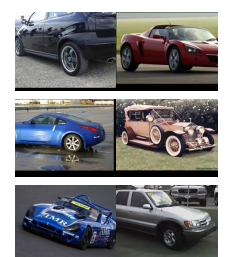
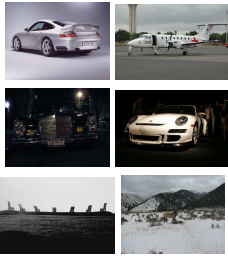
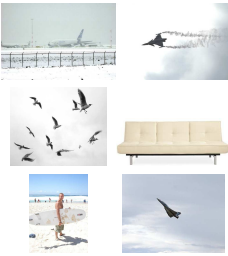
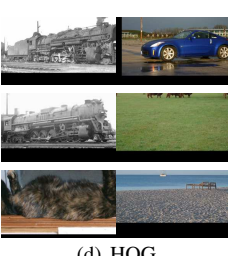
 (f) Query	 (g) Gist	 (h) Tiny Images	 (i) HOG	 (j) Our Approach
 (a) Query	 (b) Gist	 (c) Tiny Images	 (d) HOG	 (e) Our Approach
 (a) Query	 (b) Gist	 (c) Tiny Images	 (d) HOG	 (e) Our Approach
 (a) Query	 (b) Gist	 (c) Tiny Images	 (d) HOG	 (e) Our Approach
 (a) Query	 (b) Gist	 (c) Tiny Images	 (d) HOG	 (e) Our Approach

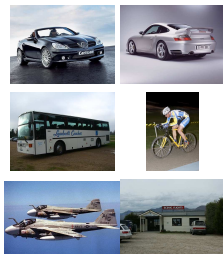
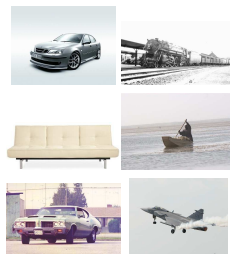
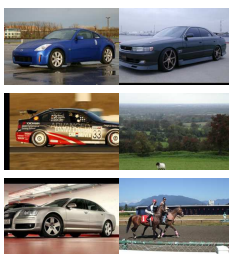
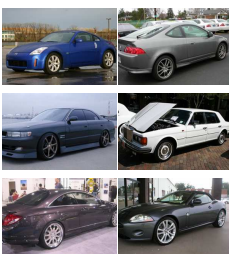
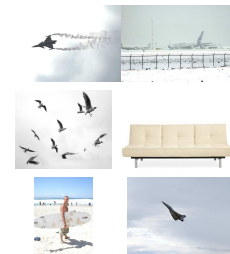
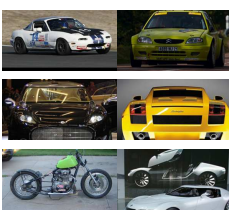
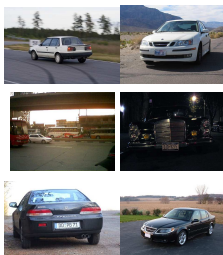
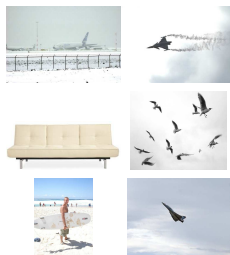
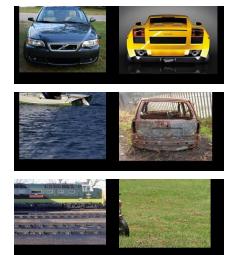
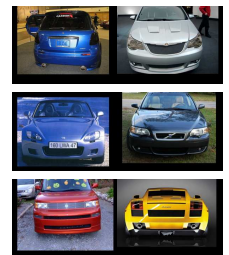
 (f) Query	 (g) Gist	 (h) Tiny Images	 (i) HOG	 (j) Our Approach
 (a) Query	 (b) Gist	 (c) Tiny Images	 (d) HOG	 (e) Our Approach
 (a) Query	 (b) Gist	 (c) Tiny Images	 (d) HOG	 (e) Our Approach
 (a) Query	 (b) Gist	 (c) Tiny Images	 (d) HOG	 (e) Our Approach
 (a) Query	 (b) Gist	 (c) Tiny Images	 (d) HOG	 (e) Our Approach

				
(f) Query	(g) Gist	(h) Tiny Images	(i) HOG	(j) Our Approach
				
(a) Query	(b) Gist	(c) Tiny Images	(d) HOG	(e) Our Approach
				
(a) Query	(b) Gist	(c) Tiny Images	(d) HOG	(e) Our Approach
				
(a) Query	(b) Gist	(c) Tiny Images	(d) HOG	(e) Our Approach
				
(a) Query	(b) Gist	(c) Tiny Images	(d) HOG	(e) Our Approach

 (f) Query	 (g) Gist	 (h) Tiny Images	 (i) HOG	 (j) Our Approach
 (a) Query	 (b) Gist	 (c) Tiny Images	 (d) HOG	 (e) Our Approach
 (a) Query	 (b) Gist	 (c) Tiny Images	 (d) HOG	 (e) Our Approach
 (a) Query	 (b) Gist	 (c) Tiny Images	 (d) HOG	 (e) Our Approach
 (a) Query	 (b) Gist	 (c) Tiny Images	 (d) HOG	 (e) Our Approach

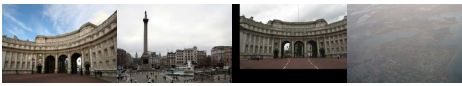
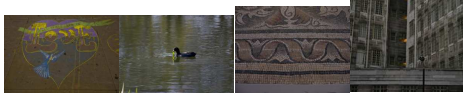
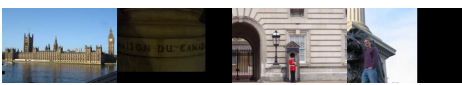
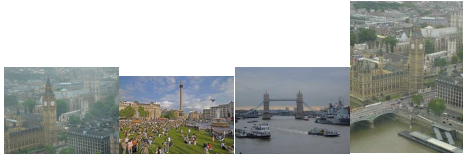
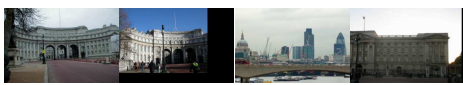
 (f) Query	 (g) Gist	 (h) Tiny Images	 (i) HOG	 (j) Our Approach
 (a) Query	 (b) Gist	 (c) Tiny Images	 (d) HOG	 (e) Our Approach
 (a) Query	 (b) Gist	 (c) Tiny Images	 (d) HOG	 (e) Our Approach
 (a) Query	 (b) Gist	 (c) Tiny Images	 (d) HOG	 (e) Our Approach
 (a) Query	 (b) Gist	 (c) Tiny Images	 (d) HOG	 (e) Our Approach

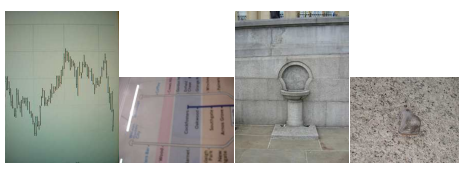
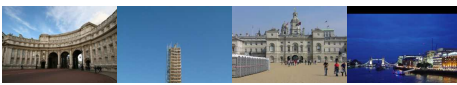
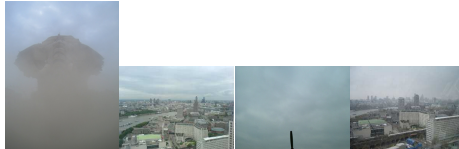
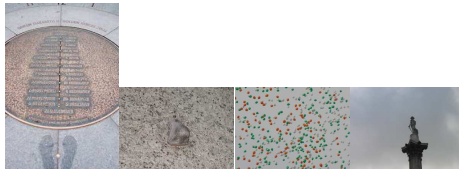
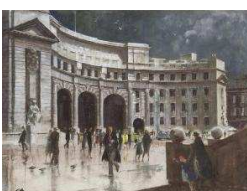
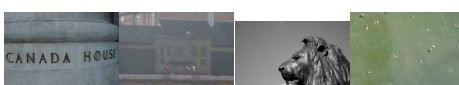
 (f) Query	 (g) Gist	 (h) Tiny Images	 (i) HOG	 (j) Our Approach
 (a) Query	 (b) Gist	 (c) Tiny Images	 (d) HOG	 (e) Our Approach
 (a) Query	 (b) Gist	 (c) Tiny Images	 (d) HOG	 (e) Our Approach
 (a) Query	 (b) Gist	 (c) Tiny Images	 (d) HOG	 (e) Our Approach
 (a) Query	 (b) Gist	 (c) Tiny Images	 (d) HOG	 (e) Our Approach

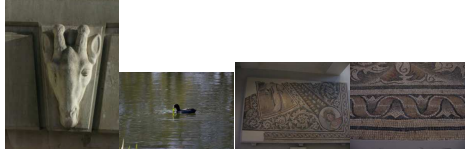
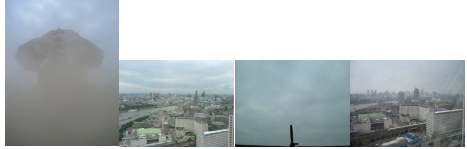
 (f) Query	 (g) Gist	 (h) Tiny Images	 (i) HOG	 (j) Our Approach
 (a) Query	 (b) Gist	 (c) Tiny Images	 (d) HOG	 (e) Our Approach
 (a) Query	 (b) Gist	 (c) Tiny Images	 (d) HOG	 (e) Our Approach

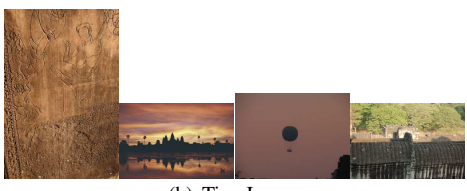
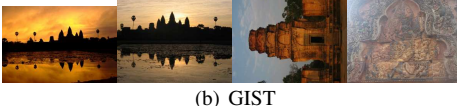
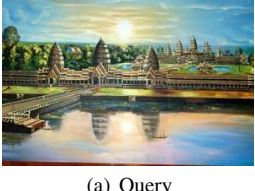
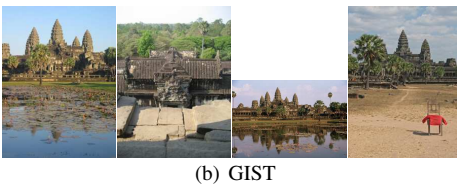
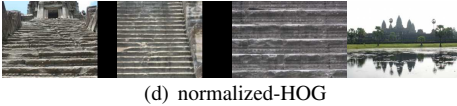
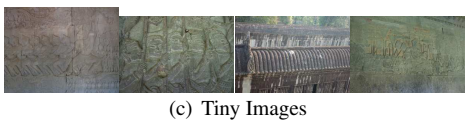
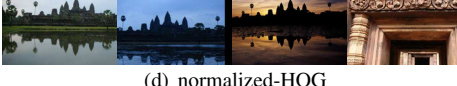
4 Painting Based Image Retrieval

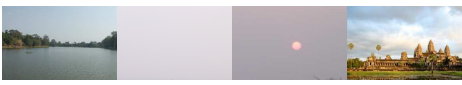
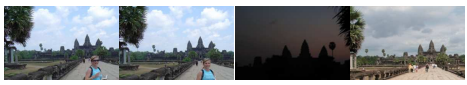
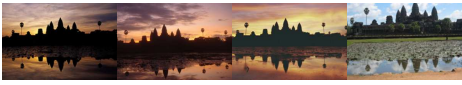
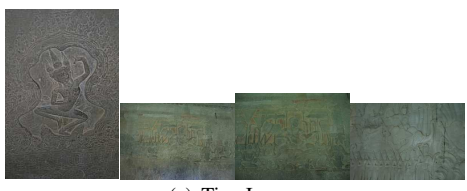
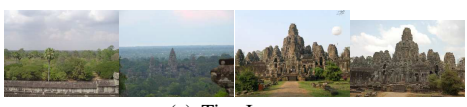
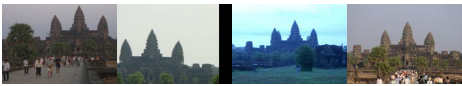
We also evaluated the performance of our system on matching paintings to images to further show the effectiveness of our approach in cross-domain visual similarity as mentioned in section 3.4. Given below is a comparatively small subset of paintings and their results that we tested and our approach.

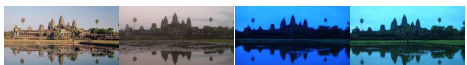
 (a) Query	 (b) GIST	 (c) Tiny Images
 (a) Query	 (d) normalized-HOG	 (e) Our Approach
 (a) Query	 (b) GIST  (d) normalized-HOG	 (c) Tiny Images  (e) Our Approach
 (a) Query	 (b) GIST  (d) normalized-HOG	 (c) Tiny Images  (e) Our Approach
 (a) Query	 (b) GIST  (d) normalized-HOG	 (c) Tiny Images  (e) Our Approach

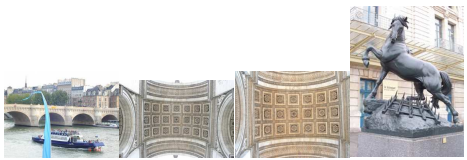
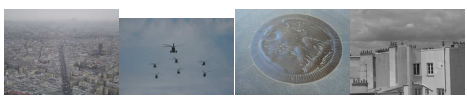
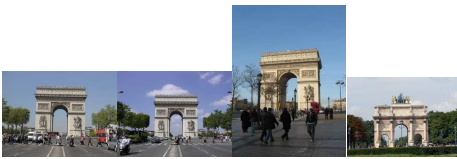
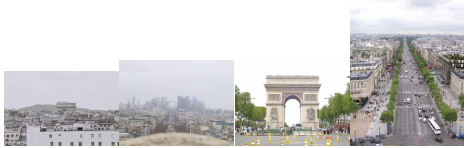
 (f) Query	 (g) GIST	 (h) Tiny Images
	 (i) normalized-HOG	 (j) Our Approach
 (a) Query	 (b) GIST	 (c) Tiny Images
	 (d) normalized-HOG	 (e) Our Approach
 (a) Query	 (b) GIST	 (c) Tiny Images
	 (d) normalized-HOG	 (e) Our Approach
 (a) Query	 (b) GIST	 (c) Tiny Images
	 (d) normalized-HOG	 (e) Our Approach
 (a) Query	 (b) GIST	 (c) Tiny Images
	 (d) normalized-HOG	 (e) Our Approach

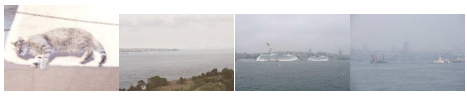
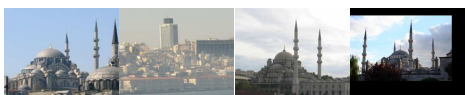
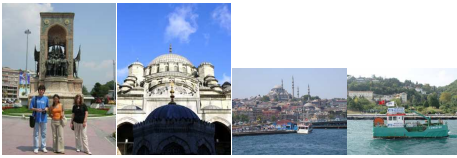
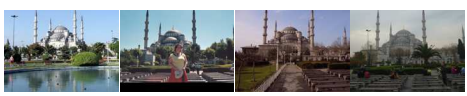
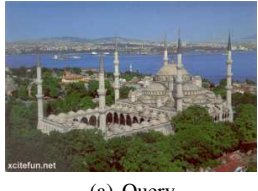
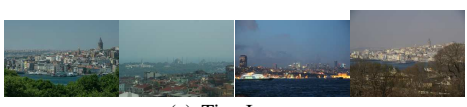
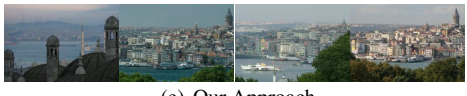
 (f) Query	 (g) GIST  (i) normalized-HOG	 (h) Tiny Images  (j) Our Approach
 (a) Query	 (b) GIST  (d) normalized-HOG	 (c) Tiny Images  (e) Our Approach
 (a) Query	 (b) GIST  (d) normalized-HOG	 (c) Tiny Images  (e) Our Approach
 (a) Query	 (b) GIST  (d) normalized-HOG	 (c) Tiny Images  (e) Our Approach
 (a) Query	 (b) GIST  (d) normalized-HOG	 (c) Tiny Images  (e) Our Approach

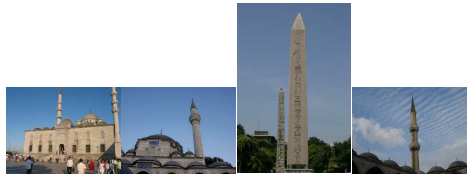
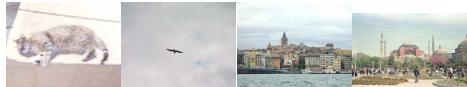
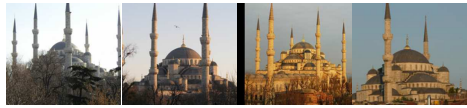
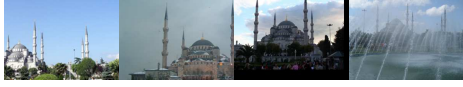
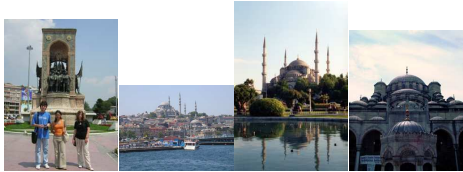
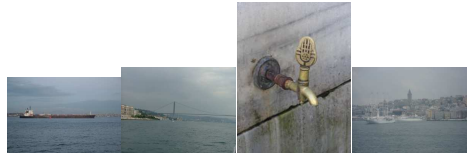
 (f) Query	 (g) GIST	 (h) Tiny Images
	 (i) normalized-HOG	 (j) Our Approach
 (a) Query	 (b) GIST	 (c) Tiny Images
	 (d) normalized-HOG	 (e) Our Approach
 (a) Query	 (b) GIST	 (c) Tiny Images
	 (d) normalized-HOG	 (e) Our Approach
 (a) Query	 (b) GIST	 (c) Tiny Images
	 (d) normalized-HOG	 (e) Our Approach

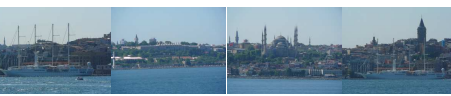
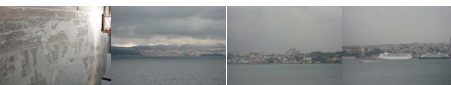
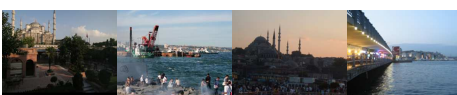
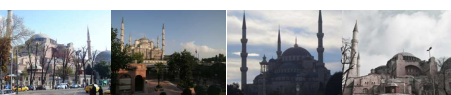
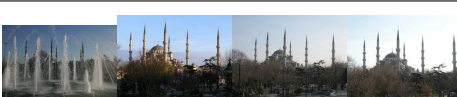
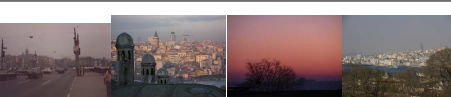
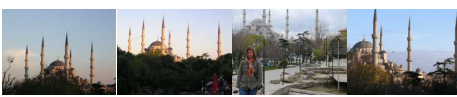
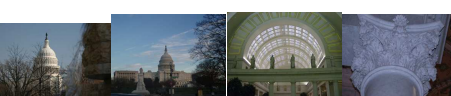
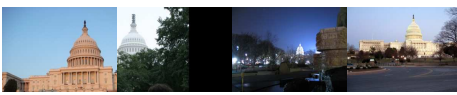
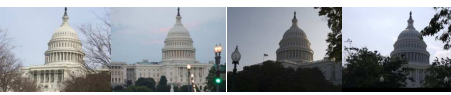
 (f) Query	 (g) GIST	 (h) Tiny Images
	 (i) normalized-HOG	 (j) Our Approach
 (a) Query	 (b) GIST	 (c) Tiny Images
	 (d) normalized-HOG	 (e) Our Approach
 (a) Query	 (b) GIST	 (c) Tiny Images
	 (d) normalized-HOG	 (e) Our Approach
 (a) Query	 (b) GIST	 (c) Tiny Images
	 (d) normalized-HOG	 (e) Our Approach

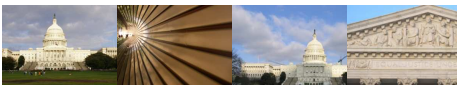
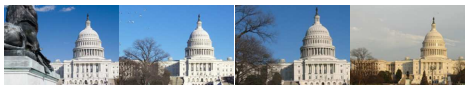
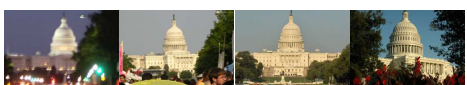
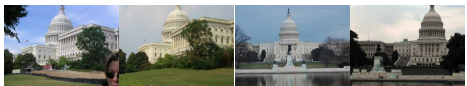
 (f) Query	 (g) GIST  (i) normalized-HOG	 (h) Tiny Images  (j) Our Approach
 (a) Query	 (b) GIST  (d) normalized-HOG	 (c) Tiny Images  (e) Our Approach
 (a) Query	 (b) GIST  (d) normalized-HOG	 (c) Tiny Images  (e) Our Approach
 (a) Query	 (b) GIST  (d) normalized-HOG	 (c) Tiny Images  (e) Our Approach
 (a) Query	 (b) GIST  (d) normalized-HOG	 (c) Tiny Images  (e) Our Approach

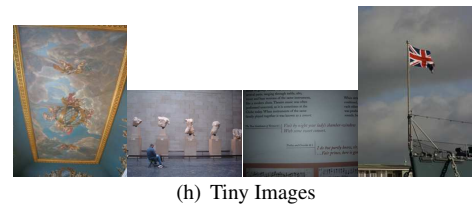
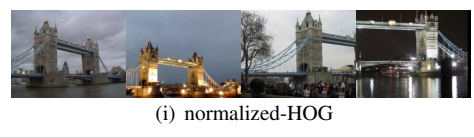
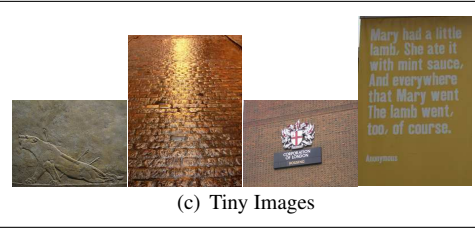
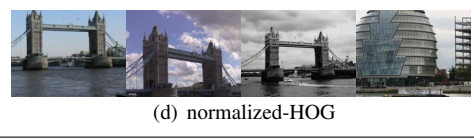
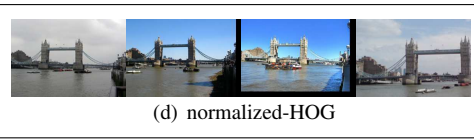
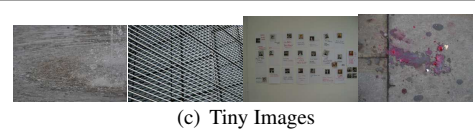
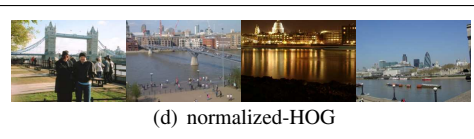
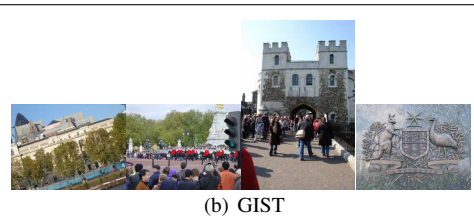
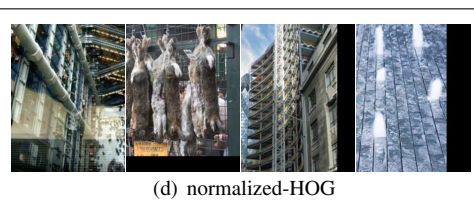
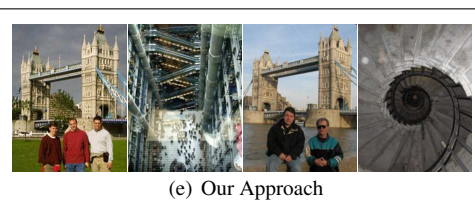
 (f) Query	 (g) GIST  (i) normalized-HOG	 (h) Tiny Images  (j) Our Approach
 (a) Query	 (b) GIST  (d) normalized-HOG	 (c) Tiny Images  (e) Our Approach
 (a) Query	 (b) GIST  (d) normalized-HOG	 (c) Tiny Images  (e) Our Approach
 (a) Query	 (b) GIST  (d) normalized-HOG	 (c) Tiny Images  (e) Our Approach

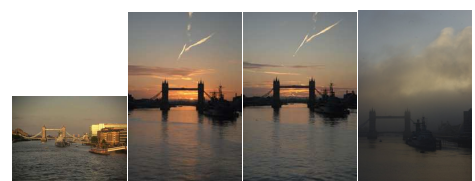
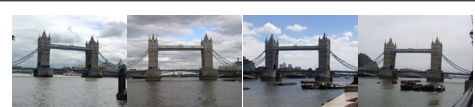
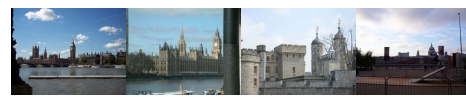
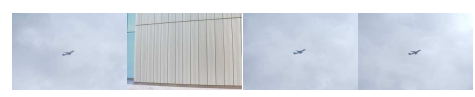
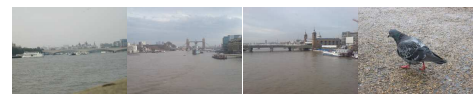
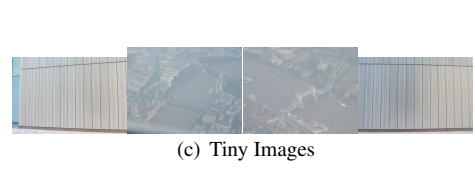
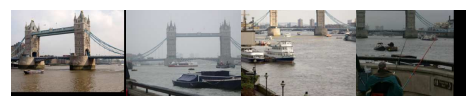
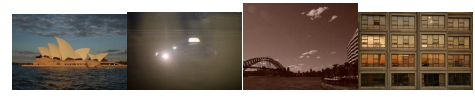
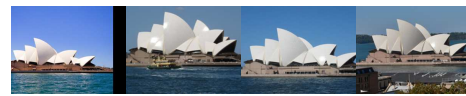
 (f) Query	 (g) GIST	 (h) Tiny Images
	 (i) normalized-HOG	 (j) Our Approach
 (a) Query	 (b) GIST	 (c) Tiny Images
	 (d) normalized-HOG	 (e) Our Approach
 (a) Query	 (b) GIST	 (c) Tiny Images
	 (d) normalized-HOG	 (e) Our Approach
 (a) Query	 (b) GIST	 (c) Tiny Images
	 (d) normalized-HOG	 (e) Our Approach

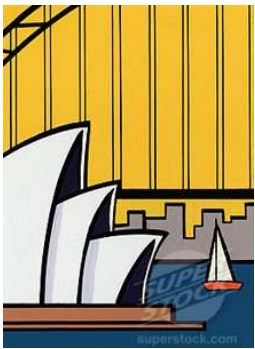
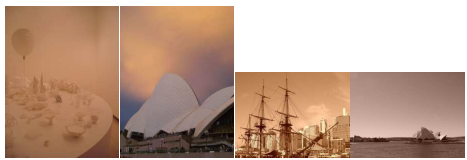
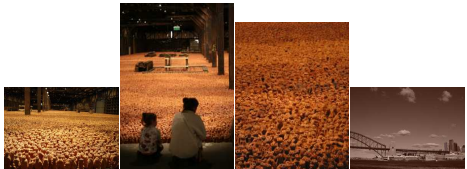
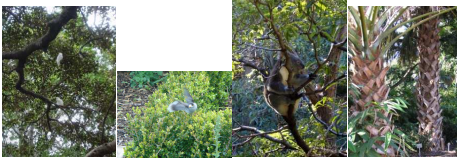
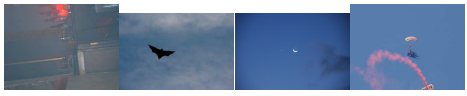
 (f) Query	 (g) GIST	 (h) Tiny Images
	 (i) normalized-HOG	 (j) Our Approach
 (a) Query	 (b) GIST	 (c) Tiny Images
	 (d) normalized-HOG	 (e) Our Approach
 (a) Query	 (b) GIST	 (c) Tiny Images
	 (d) normalized-HOG	 (e) Our Approach
 (a) Query	 (b) GIST	 (c) Tiny Images
	 (d) normalized-HOG	 (e) Our Approach
 (a) Query	 (b) GIST	 (c) Tiny Images
	 (d) normalized-HOG	 (e) Our Approach

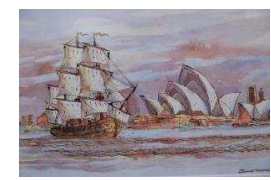
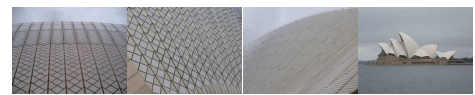
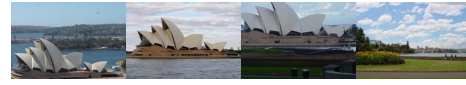
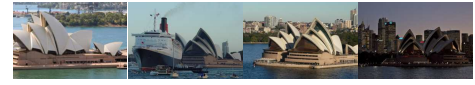
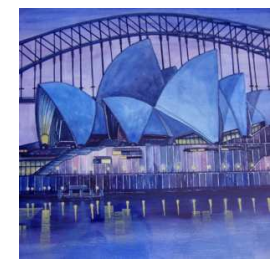
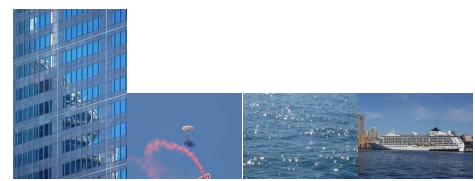
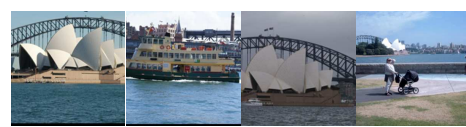
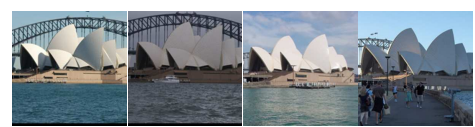
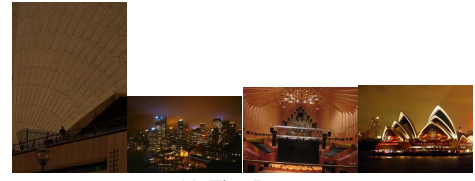
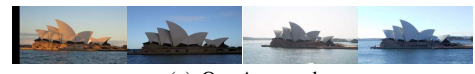
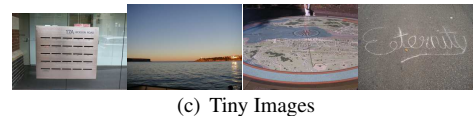
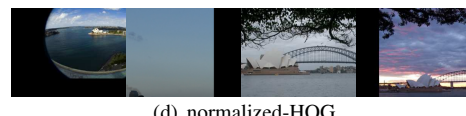
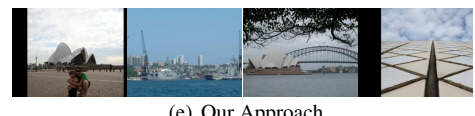
 (f) Query	 (g) GIST	 (h) Tiny Images
	 (i) normalized-HOG	 (j) Our Approach
 (a) Query	 (b) GIST	 (c) Tiny Images
	 (d) normalized-HOG	 (e) Our Approach
 (a) Query	 (b) GIST	 (c) Tiny Images
	 (d) normalized-HOG	 (e) Our Approach
 (a) Query	 (b) GIST	 (c) Tiny Images
	 (d) normalized-HOG	 (e) Our Approach
 (a) Query	 (b) GIST	 (c) Tiny Images
	 (d) normalized-HOG	 (e) Our Approach

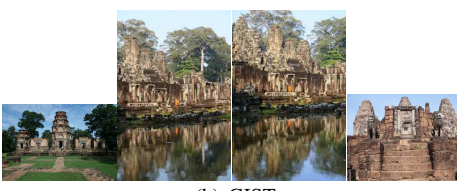
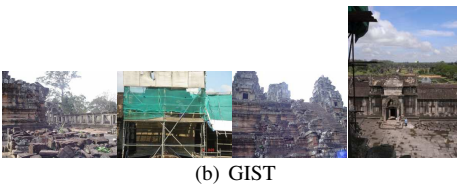
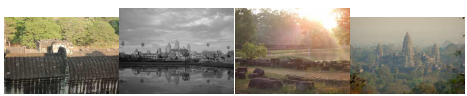
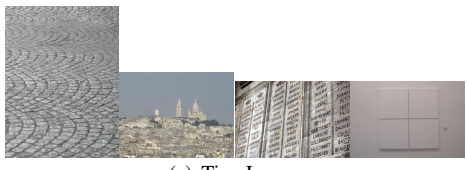
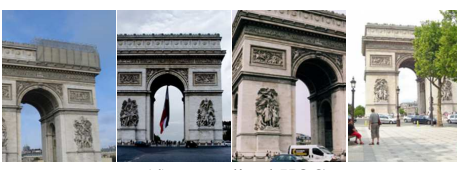
 (f) Query	 (g) GIST	 (h) Tiny Images
	 (i) normalized-HOG	 (j) Our Approach
 (a) Query	 (b) GIST	 (c) Tiny Images
	 (d) normalized-HOG	 (e) Our Approach
 (a) Query	 (b) GIST	 (c) Tiny Images
	 (d) normalized-HOG	 (e) Our Approach
 (a) Query	 (b) GIST	 (c) Tiny Images
	 (d) normalized-HOG	 (e) Our Approach

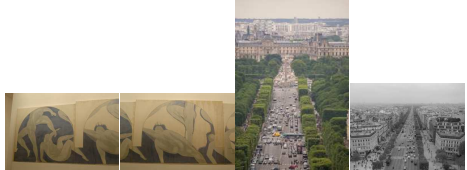
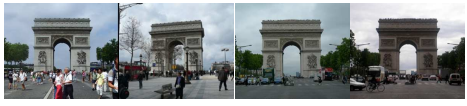
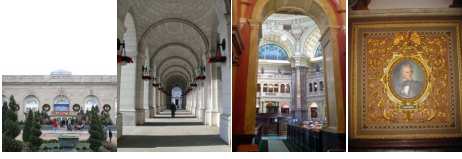
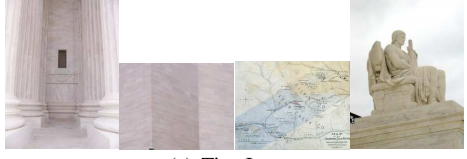
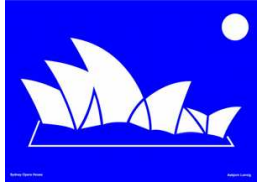
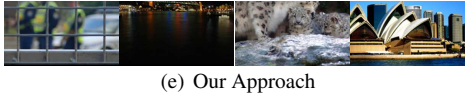
 (f) Query	 (g) GIST	 (h) Tiny Images
	 (i) normalized-HOG	 (j) Our Approach
 (a) Query	 (b) GIST	 (c) Tiny Images
	 (d) normalized-HOG	 (e) Our Approach
 (a) Query	 (b) GIST	 (c) Tiny Images
	 (d) normalized-HOG	 (e) Our Approach
 (a) Query	 (b) GIST	 (c) Tiny Images
	 (d) normalized-HOG	 (e) Our Approach
 (a) Query	 (b) GIST	 (c) Tiny Images
	 (d) normalized-HOG	 (e) Our Approach

 (f) Query	 (g) GIST	 (h) Tiny Images
	 (i) normalized-HOG	 (j) Our Approach
 (a) Query	 (b) GIST	 (c) Tiny Images
	 (d) normalized-HOG	 (e) Our Approach
 (a) Query	 (b) GIST	 (c) Tiny Images
	 (d) normalized-HOG	 (e) Our Approach
 (a) Query	 (b) GIST	 (c) Tiny Images
	 (d) normalized-HOG	 (e) Our Approach
 (a) Query	 (b) GIST	 (c) Tiny Images
	 (d) normalized-HOG	 (e) Our Approach

 (f) Query	 (g) GIST	 (h) Tiny Images
	 (i) normalized-HOG	 (j) Our Approach
 (a) Query	 (b) GIST	 (c) Tiny Images
	 (d) normalized-HOG	 (e) Our Approach
 (a) Query	 (b) GIST	 (c) Tiny Images
	 (d) normalized-HOG	 (e) Our Approach
 (a) Query	 (b) GIST	 (c) Tiny Images
	 (d) normalized-HOG	 (e) Our Approach

 (a) Query	 (b) GIST	 (c) Tiny Images
	 (d) normalized-HOG	 (e) Our Approach
 (a) Query	 (b) GIST	 (c) Tiny Images
	 (d) normalized-HOG	 (e) Our Approach
 (a) Query	 (b) GIST	 (c) Tiny Images
	 (d) normalized-HOG	 (e) Our Approach
 (a) Query	 (b) GIST	 (c) Tiny Images
	 (d) normalized-HOG	 (e) Our Approach

 (a) Query	 (b) GIST	 (c) Tiny Images
	 (d) normalized-HOG	 (e) Our Approach
 (a) Query	 (b) GIST	 (c) Tiny Images
	 (d) normalized-HOG	 (e) Our Approach
 (a) Query	 (b) GIST	 (c) Tiny Images
	 (d) normalized-HOG	 (e) Our Approach
 (a) Query	 (b) GIST	 (c) Tiny Images
	 (d) normalized-HOG	 (e) Our Approach

 (f) Query	 (g) GIST	 (h) Tiny Images
	 (i) normalized-HOG	 (j) Our Approach
 (a) Query	 (b) GIST	 (c) Tiny Images
	 (d) normalized-HOG	 (e) Our Approach
 (a) Query	 (b) GIST	 (c) Tiny Images
	 (d) normalized-HOG	 (e) Our Approach
 (a) Query	 (b) GIST	 (c) Tiny Images
	 (d) normalized-HOG	 (e) Our Approach

5 Anonymous Submission - Reference 1

Reference 1 (Discriminative Exemplar-based Object Detection and Association) is provided as file reference1.pdf.

References

- DALAL, N., AND TRIGGS, B. 2005. Histograms of oriented gradients for human detection. In *In CVPR*, 886–893.
- HAYS, J., AND EFROS, A. A. 2007. Scene completion using millions of photographs. *ACM Transactions on Graphics (SIGGRAPH 2007)* 26, 3 (August).
- OLIVA, A., AND TORRALBA, A. 2006. Building the gist of a scene: the role of global image features in recognition. In *Progress in Brain Research*, 2006.
- TORRALBA, A., FERGUS, R., AND FREEMAN, W. T. 2008. 80 million tiny images: a large database for non-parametric object and scene recognition. *IEEE PAMI* 30, 11 (November), 1958–1970.