
SUPPLEMENTAL MATERIAL

of

Transfer Learning in a Transductive Setting

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1 Qualitative results

Figure 1 shows the graph structure build between the test images to transfer labels. As the test images are sorted by class, the block structure around the diagonal indicates that the graph structure can help to improve the labeling. This is also supported by our quantitative results.

2 Cross-validation parameter estimation

Figure 2 shows different γ , cross-validated on the training set of AwA. According to this figure we chose $\gamma = 0.98$ (red dashed line).

3 Result tables for additional semantic relatedness measures.

For detailed inspection we provide results for the alternative semantic knowledge sources.

- Table 1 shows results for the AwA dataset.
- Table 2 shows results for the ImageNet dataset and is the base of Figure 4a in the submission.
- Table 3 shows results for the MPII Composite dataset and is the base of Figure 5a in the submission.

We note that in all cases our PST approach outperforms related work and baselines.

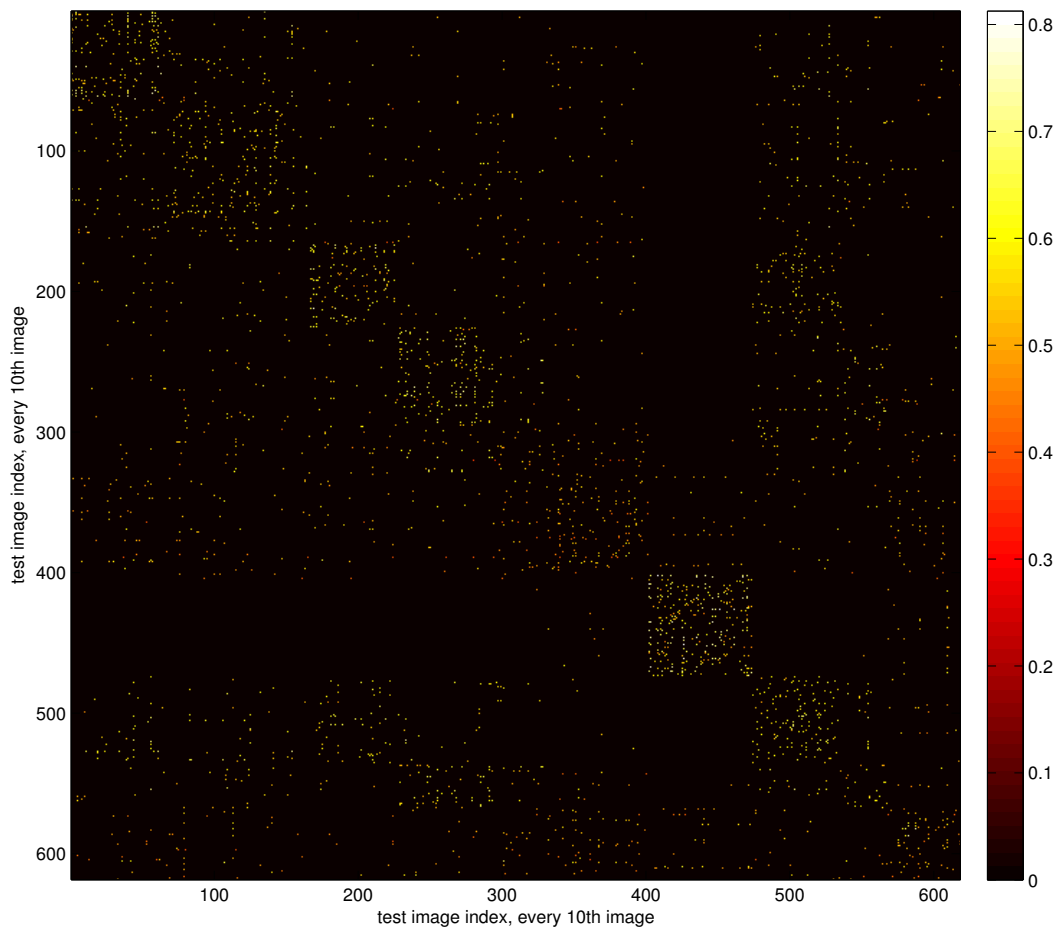


Figure 1: Visualisation of kNN graph on test images for AWA dataset, manual associations.

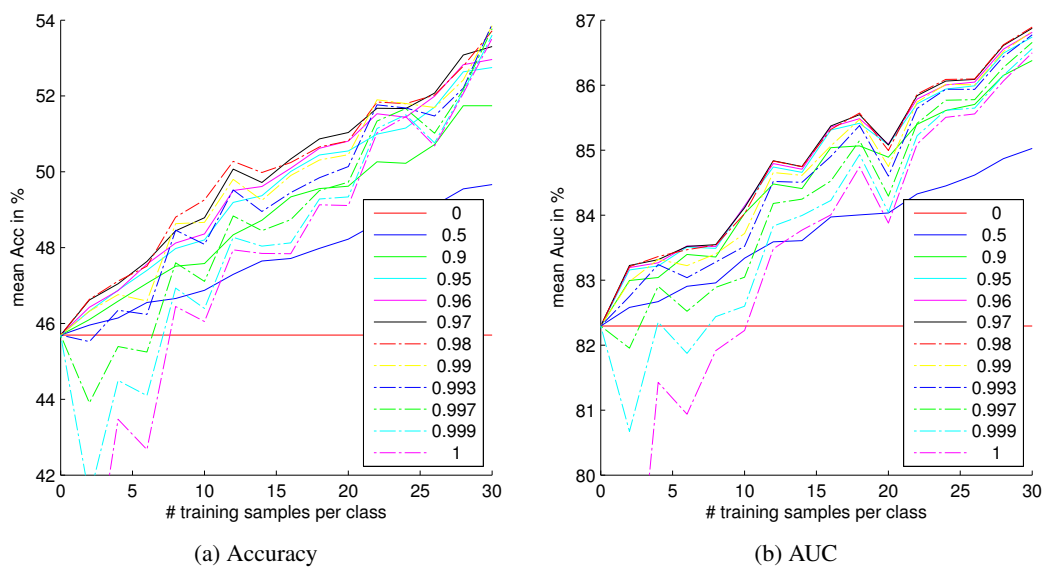


Figure 2: 5-fold crossvalidation of parameter γ on training set of AWA.

	DAP [24]	DAP	PST (ours)
Attributes - manual def. ass.	78.5	80.4	83.7
Attributes - WordNet	60.5	61.1	61.7
Attributes - Wikipedia	69.7	70.4	77.0
Attributes - Yahoo Web	60.4	61.1	62.0
Attributes - Yahoo Image	71.0	74.3	81.1
Attributes - Flickr Image	70.1	66.2	73.6
Direct similarity - WordNet	73.4	73.9	76.4
Direct similarity - Wikipedia	76.6	78.9	80.9
Direct similarity - Yahoo Web	77.7	77.6	79.3
Direct similarity - Yahoo Image	78.8	78.7	80.0
Direct similarity - Flickr Image	77.8	78.6	80.2

Table 1: AwA dataset, mean AUC in %. The first column reports the results of [24], the second our reproduction, and the third results for our approach.

	[23]	PST (ours)
Hierarchy - leaf nodes	27.2	30.4
Hierarchy - inner nodes	33.3	34.0
Attributes - Wikipedia	19.1	22.8
Attributes - Yahoo Holonyms	22.7	27.3
Attributes - Yahoo Image	18.6	25.3
Attributes - Yahoo Snippets	23.8	27.2
Direct similarity - Wikipedia	24.4	26.9
Direct similarity - Yahoo Web	30.7	33.1
Direct similarity - Yahoo Image	28.0	31.5
Direct similarity - Yahoo Snippets	24.5	28.3

Table 2: ImageNet, top-5 accuracy in %. Comparison of our PST approach to results reported in [23], underlying table for bar plot in Figure 4a in our submission.

	[22]	PST (our)
freqs-literal	22.9	34.0
freqs-WN	22.1	32.8
tf*idf-literal	22.4	34.4
tf*idf-WN	21.5	29.2

Table 3: MPII Composite Activities Dataset, mean AP in %, underlying table for bar plot in Figure 5a in our submission.