Colored Maximum Variance Unfolding (ID T23)

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Dimensionality Reduction with Side Information

Key Idea

.Preserve local distance structure from the data;
.Maximally align with the side information.

Primal Problem

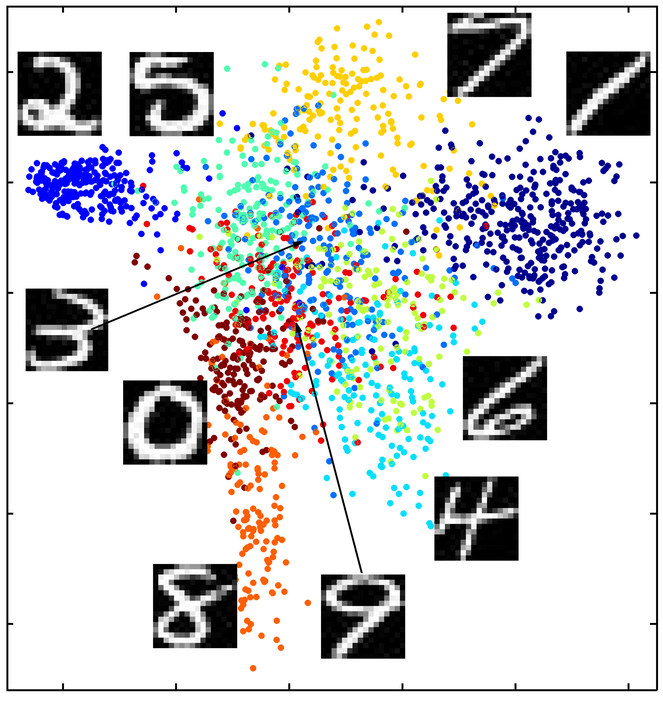
.Maximize dependence measured by HSIC, ie. tr **H K H L**;
.Subject to constraints on distances between neighbors.

Dual Problem

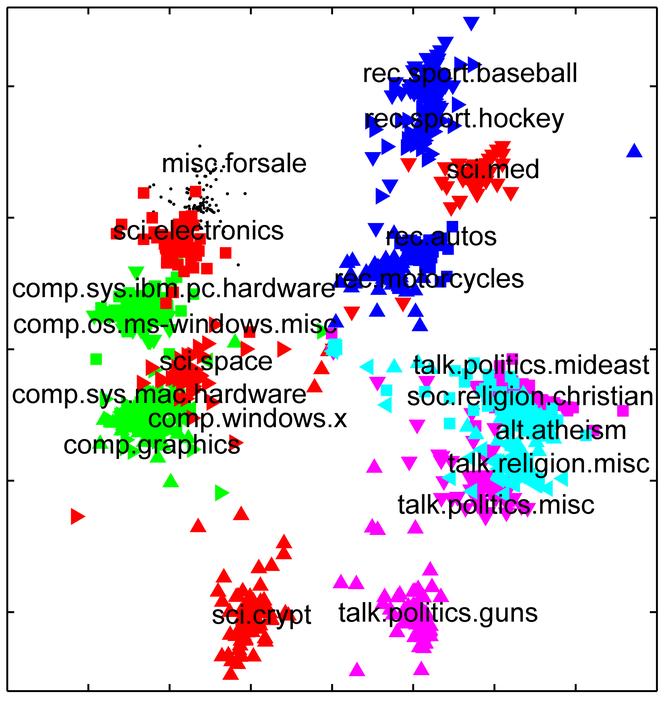
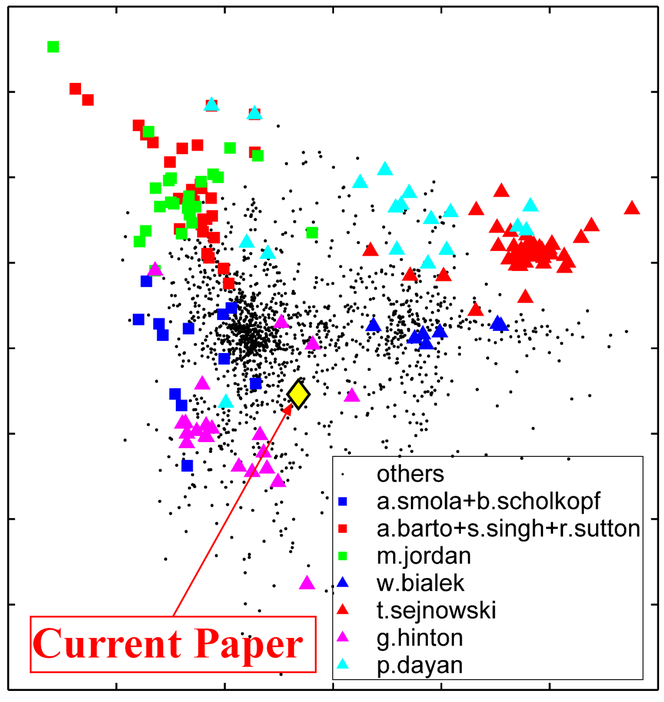
.Learn the edge weights for the nearest neighbor graph;
.Subject to constraints on the graph Laplacian.

Visualizations

USPS digits with class labels



Newsgroups with class labels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