

Robust self learning

This self learning method is a variant of expectation maximization method.

- Expectation Step:
 - In the expectation step we compute the WX and WZ matrices which are used to project X and Z into the shared space. Wx and WZ are computed based on the dictionary D .
- Maximization Step:
 - In the maximization step we update the dictionary D based on the matrices WX and WY .
 - Dictionary D is computed using a simple nearest neighbor algorithm. For each row in $X*WX$ we find its nearest neighbor in $Y*WY$ and make the corresponding entries = 1 in the dictionary D .
- Joining initialization and Robust self learning:
 - It was observed that just using both of them did not work. Some other Improvements such as Cross-domain Similarity Local Scaling (CSLS), symmetric re weighting are required to improve the solution.
- Applying CSLS retrieval and symmetric reweighting:
 - We observed that by making above improvements the results were better than previous but there are some shortcomings which need to be exploited.