

Supplementary Material: Effective and Adaptive Multi-metric Refined Similarity Graph Fusion for Multi-view Clustering

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1 Similarity Visualization

We draw the the similarity matrices obtained by the refined and non-refined similarity measurements in Suppl.Table 1.

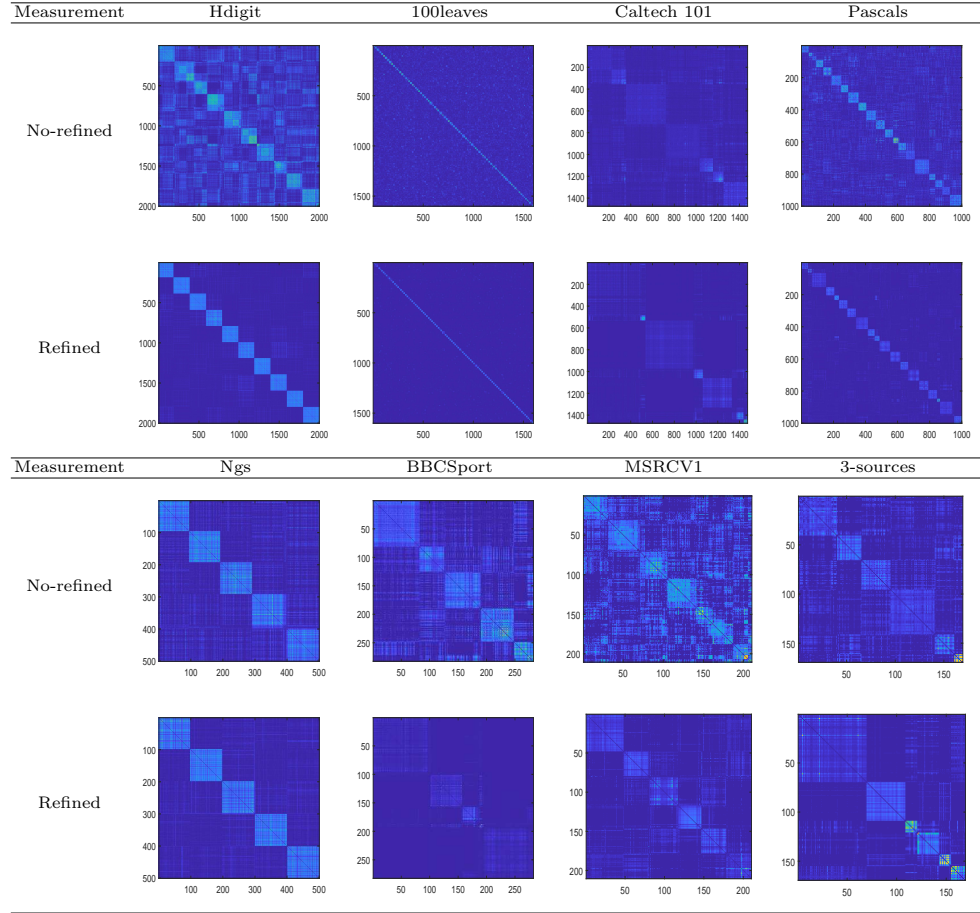
2 Convergence Analysis

To verify the convergence of our method, we calculate the relative residual value ($\frac{\|\mathbf{S}_{t+1}-\mathbf{S}_t\|}{\|\mathbf{S}_t\|} + \frac{\|\mathbf{U}_{t+1}-\mathbf{U}_t\|}{\|\mathbf{U}_t\|}$) among 20 iterations, as shown in Suppl.Fig. 1. The algorithm reaches the convergence status within 5 iterations on all datasets.

3 Parameter Sensitivity Analysis

In our method, there are two free parameters, i.e., k , λ . Suppl.Fig. 2 and Suppl.Fig. 3 demonstrate the sensitivity of the parameters k and λ on eight data sets, respectively. Our method is robust with respect to the parameters λ and k . The higher the value of λ , the better the performance is. Our method achieves satisfying and stable performance when the parameter k set to be 1 or 3, in the large datasets (the number of samples greater than or equal to 1000). For most of small datasets, it achieves the best performance when the parameter k set to be 5.

Table 1: Visualization of the similarity matrices obtained by the refined and non-refined similarity measurements



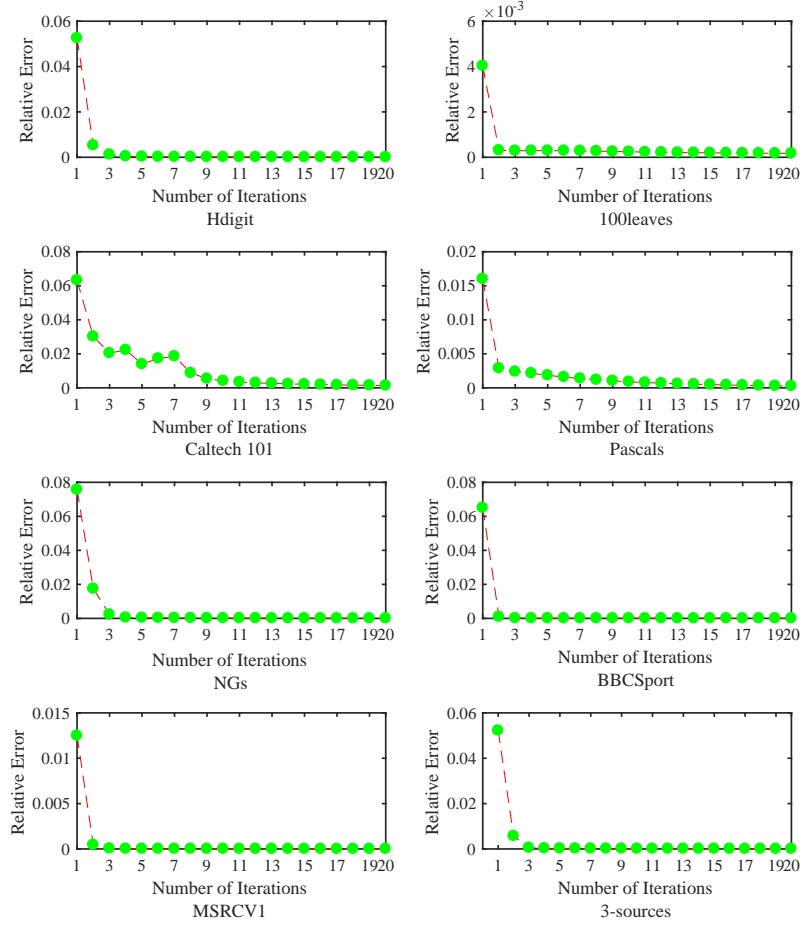


Fig. 1: Relative residual value with the respect to the number of iterations in eight benchmark data sets.

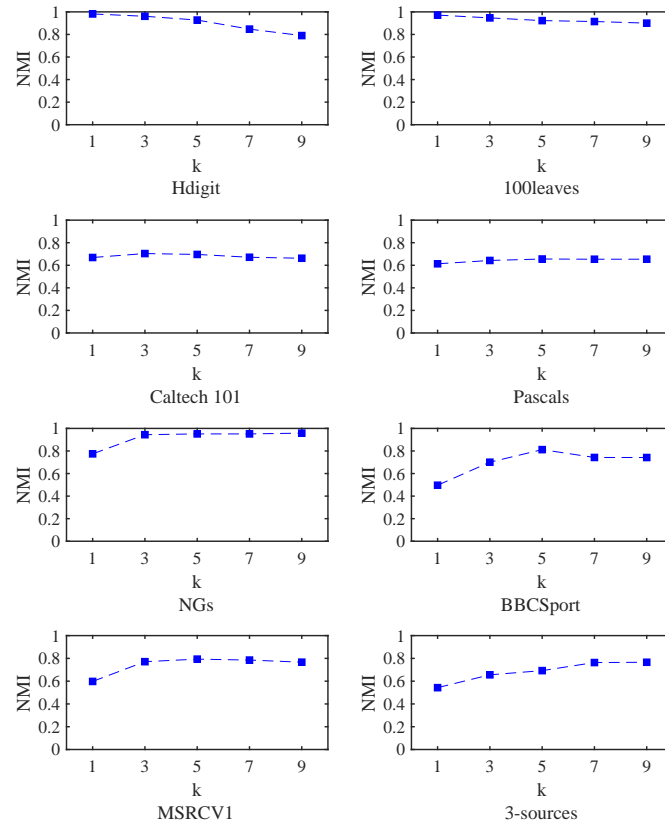


Fig. 2: Sensitivity analysis on the parameter k in eight benchmark datasets.

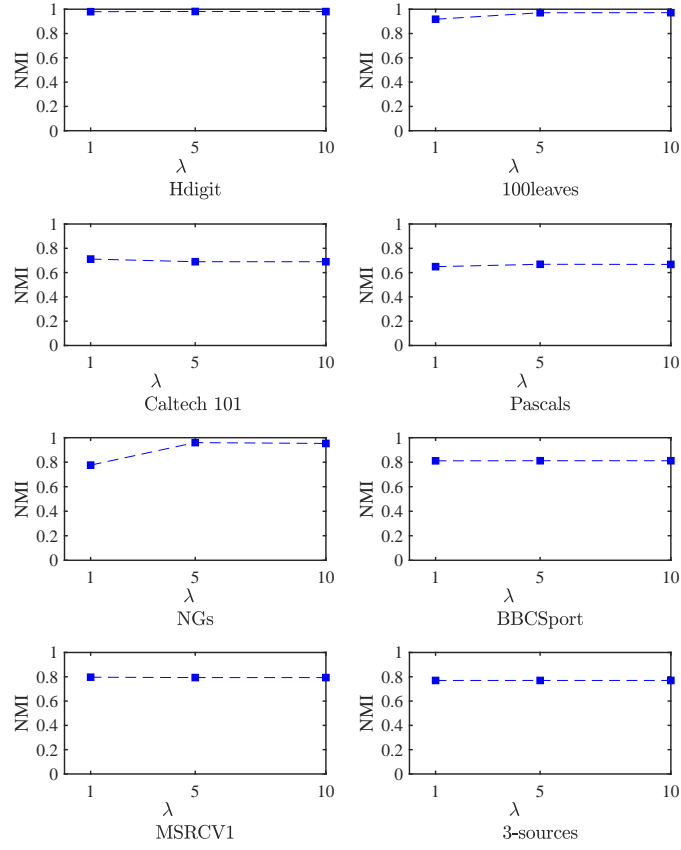


Fig. 3: Sensitivity analysis on the parameter λ in eight benchmark datasets.