Abstract

Affinity propagation (AP) was recently introduced as an un-supervised learning algorithm for exemplar based clustering. In this paper novel text document clustering algorithm has been developed based on vector space model, phrases and affinity propagation clustering algorithm. Proposed algorithm can be called Phrase affinity clustering (PAC). PAC first finds the phrase by ukkonen suffix tree construction algorithm, second finds the vector space model using tf-idf weighting scheme of phrase. Third calculate the similarity matrix form VSD using cosine similarity. In Last affinity propagation algorithm generate the clusters. F-Measure, Purity and Entropy of Proposed algorithm is better than GAHC, ST-GAHC and ST-KNN on OHSUMED, RCV1 and News group data sets.

References

- Jain, A. and Dubes R. “Algorithms for Clustering Data”, Englewood Cliffs,
Text Document Clustering based on Phrase Similarity using Affinity Propagation

- Renu Chu Guan, Xiaohu Shi, Maurizio Marchese, Chen Yang, and Yanchun Liang, "Text Clustering with Seeds Affinity Propagation", IEEE Transaction on Knowledge and Data Engineering Vol. 23 No 4, 2011, pp 627-637.
Index Terms

Computer Science

Artificial Intelligence

Keywords

text clustering  affinity propagation  unsupervised learning  vector space model

suffix tree

tf-idf weighting scheme

Purity

Entropy-measure

GAHC

ST-GAHC

ST-KNN