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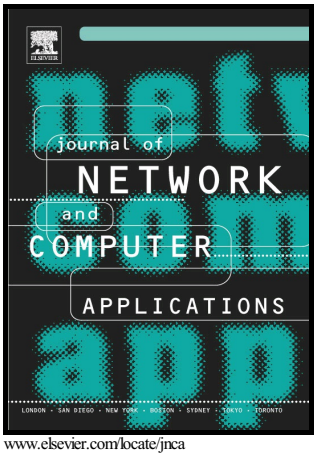

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SentiRelated: a Cross-Domain Sentiment Classification Algorithm for Short Texts through Sentiment Related Index

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Abstract

Sentiment classification for short texts, aiming at predicting sentiment polarity of short texts automatically, has attracted more and more attentions due to its wide applications. Traditional supervised classification approaches perform well in predicting the sentiment polarity for a given domain, but the performance decreases drastically when a classifier trained on a specific domain is directly applied to predict the sentiment polarity of another domain because the words used in the trained domain may not appear in the test domain. Moreover, the same word may indicate different sentiment polarities in different domains. In this paper, to bridge the gap between different domains, we create a *Sentiment Related Index (SRI)* to measure the association between different lexical elements in a specific domain with the help of *domain-independent features* as a bridge. Then we propose a novel cross-domain sentiment classification algorithm based on SRI, which is termed *SentiRelated*, to analyze the sentiment polarity for short texts. SentiRelated utilizes SRI to expand feature vectors based on unlabeled data from the target domain. In this way, some important sentiment indicators for the target domain are appended to feature vectors. At last, we validate our SentiRelated algorithm on two typical datasets. The experimental results demonstrate that, compared with state-of-the-art algorithms, our SentiRelated algorithm can improve the per-

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