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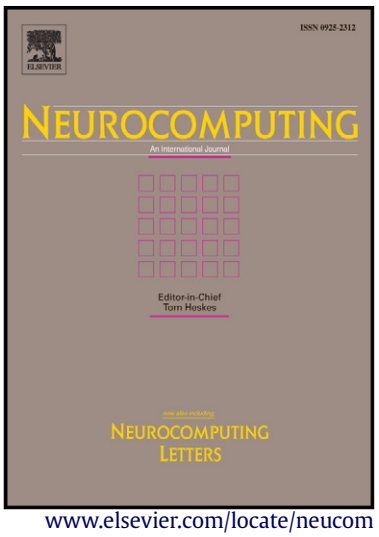

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PII: S0925-2312(14)01670-1
DOI: http://dx.doi.org/10.1016/j.neucom.2014.12.006
Reference: NEUCOM14959

To appear in: *Neurocomputing*

Received date: 8 April 2014
Revised date: 23 November 2014
Accepted date: 6 December 2014

Cite this article as: Guangyou Zhou, Yan Zhou, Xiyue Guo, Xinhui Tu, Tingting He, Cross-Domain Sentiment Classification via Topical Correspondence Transfer, *Neurocomputing*, http://dx.doi.org/10.1016/j.neucom.2014.12.006

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Abstract

Sentiment classification aims to automatically predict sentiment polarity (e.g., positive or negative) of user generated sentiment data (e.g., reviews, blogs). In real applications, these users generated sentiment data can span so many different domains that it is difficult to manually label training data for all of them. In this article, we develop a general solution to cross-domain sentiment classification when we do not have any labeled data in a target domain but have some labeled data in a source domain. To bridge the gap between domains, we propose a novel algorithm, called topical correspondence transfer (TCT). This is achieved by learning the domain-specific information from different domains into unified topics, with the help of shared topics across all domains. In this way, the topical correspondences behind the shared topics can be used as a bridge to reduce the gap between domains. We conduct experiments on a benchmark composed of reviews of 4 types of Amazon products. Experimental results show that our proposed TCT significantly outperforms the baseline method, and achieves an accuracy which is competitive with the state-of-the-art methods for cross-domain sentiment classification.

Keywords: Sentiment Classification, Cross-Domain, Topical Correspondence Transfer

2010 MSC: 00-01, 99-00

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