Classification of Chinese-To-English Translated Social Network Timelines using Naïve Bayes

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Abstract—This study proposes a method that classifies Chinese social network positive-negative comments (Weibo) using naïve Bayes algorithm trained from English social network (Twitter) corpus. We train our text classifier using Twitter corpus (in English language), and use this classifier to classify Chinese text. In the previous research, Chinese sentences are processed using Chinese word segmentation algorithms before the application of machine learning algorithm. Chinese word segmentation algorithms split Chinese sentences into a series of words since a Chinese word consists of several Chinese characters unlike English sentences. Therefore, the quality of word segmentation algorithm obviously influences the accuracy of Chinese text categorization problems. In our research, we eliminate Chinese word segmentation stage (a traditional preprocessing stage of Chinese text classification) to avoid the effect on the quality of segmentation algorithms. Instead of Chinese word segmentation processing, we translate Chinese text into English text via Google translator. Based on Twitter corpus, we directly generate a text classifier by using naïve Bayes multinomial algorithm. Finally, the text classifier classifies a new Chinese text (a Weibo text, which has been translated into English by Google translation at preprocessing stage). We conduct an experiment comparing the performance of naïve Bayes multinomial algorithm and C4.5 in terms of accuracy.

Keyword—Text categorization, Classification, Naive Bayes, Multinomial model, Weibo, Micro-blog, Comment

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