Title: Sentiment Identification with User Social Effects for Detection of Social Attacks: Preliminary Results

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Abstract

Social media is becoming a major and popular technological platform that allows users to express personal opinions toward the subjects with shared interests. Identifying the sentiments of these social media data can help users make informed decisions. Existing research mainly focus on developing algorithms by mining textual information in social media. However, none of them collectively consider the relationships among heterogeneous social entities. Since users interact with social brands in social platforms, their opinions on specific topics are inevitably dependent on many social effects such as user preference on topics, peer influence, user profile information, etc. In this work, we present a systematic framework to identify sentiments by incorporating user social effects besides textual information. We apply item-based collaborative filtering technique to estimate user preference. It is also implemented using MapReduce under Hadoop environment. Our experiments, conducted on large datasets from current major social platforms, such as Facebook, Twitter, Amazon.com, and Flyertalk.com, demonstrate that incorporating those user social effects can significantly improve sentiment identification accuracy. In addition, we also apply this framework to cyber-security domain for finding social attacks and show some preliminary results.