Sentiment Analysis and User Behavior Prediction in Social Networks

LIU MINGJIE

UNIVERSITI TEKNOLOGI MALAYSIA

CHAPTER 5

INTRODUCTION

5.1 Summary

This investigational has to do with sentiment analysis and belief prediction of the members of social networks. The core findings we come to when we analyze Twitter data are the following:

Image modality (presence of pictures) and sentiment polarity (the degree to which the sentiment is positive or negative): The tweets containing images display big differences in the sentiment polarity distribution as compared to the tweets without text. Image modal tweets commonly present with positive emotions. It is possible to assume that here one of the reasons is the fact that images are able to deliver emotional content more efficiently; for instance, through smiles and emojis, which are associated with feelings.

Emotional polarity (based on brand-specific) characteristics: Variability presents in the emotional polarity dispersal across different brands on social media platforms. Throughout the Adjectives section, the polarity remains mostly positive; hence, the narrative has a positive attitude to cover. But, in the Narrative parts, the sentiment polarity is mainly negative, while the volume of text expressing strong emotions is noticeably smaller in comparison with the Adjectives parts. This goes along with the observation that users have their own strong feelings towards different brands. Here, brands should implement an analytics tool, such as the sentiment analysis, to understand the way their clients perceive their products and services, which will allow them to carry out more customized marketing.

Sentiment Analysis (SA) and User Behavior (UB) Prediction: The prediction of user behavior by way of building feature engineering that models the result of the sentiment analysis is possible. For clarification, we can conduct a test to find out if a user is likely to retweet, comment, or like a tweet according to his focus on sentiment probability and sentiment distribution. In this way, a new approach to the analysis of online user conduct is achieved, and the basis for the creation of behavioral models of the internet user conduct is laid.

5.2 Comparison with previous research

Contrasted with other sentiment analysis and user behavior prediction studies, the current research serves as a representative example of the following:

Multimodal data analysis: This article is an example of multimodal data analysis that uses images and text, which was less present in earlier studies than that focused on text data. It contributes to discovering more concisely the sentiment conveyed by the user and assesses the precision of the sentiment analysis.

Domain-Specific Analysis: Brands' information is provided in the case, however, previous analysis concentrated on generic domains. Such an approach empowers the brand by 'zeroing' in on the emotions her clients are expressing in particular areas and this ultimately facilitates formulation of a more balanced and effective brand marketing strategy.

Interpretability Exploration: As the final opinion of the article reviews how to interpret classifications of sentiment and behavior models, the previous reviews mainly centered on the performance of models. It contributes to increasing model reliability and, at the same time, the information comprehensibility.

5.3 Future works

Further directions in future research include:

Cross-cultural sentiment analysis: The investigation of sentimental differences in the expression of reasons in various cultural surroundings and the creation of the multidimensional methods of inter-cultural sentiment analysis in order to enhance the accuracy and applicability of sentiment analysis. Multi-task learning: Bring in sentiment analysis with other activities like the user behavior analysis as well as work on enhancing the model efficacy to have a complete view of user behavior.

Explain ability Enhancements: Creation of more sophisticated methods for understanding the topics as well as supplying simplifying and easily apprehend able responses to the user for grasping the results of the model.

Data privacy protection: Explore the effective ways of safeguarding user privacy and data to develop sentiment analysis and user behavior prediction, which strikes a balance between data utilization and user data privacy. This study contributes to the literature on sentiment analysis and user behavior prediction. It raises new concerns or questions in the social networking context and guides research in future studies.