

NATURAL LANGUAGE PROCESSING IN SENTIMENT ANALYSIS OF SOCIAL MEDIA DATA

In recent years social media platforms have become an important source of information for businesses, politicians, and researchers to understand public opinion and sentiment. Sentiment analysis is the process of determining the attitude, opinions and emotions of a speaker or writer with respect to some topic or the overall contextual polarity of a document [1]. The suggested study focuses on the role of Natural Language Processing (NLP) techniques in sentiment analysis of social media data.

NLP is a branch of computer science that studies how to enable the computers to understand written and spoken text in the way similar to human beings [2]. The main task for NLP is machine processing of the text. The most popular practical tasks of natural language machine processing include machine translation, spell checking, grammar, lexis and style of the text, speech recognition and answer search, summarization, sentiment analysis, text classification, relevant online advertising. A thorough literature review of the state-of-the-art techniques in NLP-based sentiment analysis revealed traditional rule-based approaches and more recent machine learning-based methods.

The research presents the development and evaluation of a novel NLP-based sentiment analysis model using a dataset of social media. Searching for negative texts in social media and highlighting the main complaints helps businessmen, marketers and politicians to change conceptions, improve products and advertising, as well as reduce the level of dissatisfaction. By automatically analyzing user behavior on the Internet, their pages in social networks and queries in search engines, NLP promotes the right advertising for them. NLP technologies are used in medicine to improve patient care, maintain medical records, and search for key terms in specialized literature. In law enforcement, machine data processing and prediction allow to prevent crimes. Using NLP, the police can analyze criminal activity, find the code words of criminals in advertising and react more quickly to avoid violence and human trafficking.

Furthermore, the ethical considerations and limitations of using social media data for sentiment analysis, such as privacy and bias are discussed. The results of the research demonstrate the potential of NLP-based sentiment analysis for gaining valuable insights from social media data, highlight the importance of careful consideration of ethical and practical issues in its implementation.

REFERENCES

1. Nakov P. Semantic Sentiment Analysis of Twitter Data // <https://www.arxiv-vanity.com/papers/1710.01492/>
2. What is natural language processing? // <https://www.ibm.com/topics/natural-language-processing>