Using Artificial Intelligence for Analyzing the Sentiment of Fake News

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Abstract

The rapid proliferation of fake news on social networks has prompted significant research into its detection, characterization, and societal impact. Yet, the emotional and affective dimensions of fake news content remain underexplored. This study investigates the sentiment polarity of fake versus real news using machine learning–based natural language processing (NLP) techniques. We constructed a custom sentiment analyzer derived from the VADER library and applied it to multiple verified datasets, including political, gossip, rumor, and disaster-related tweets. Results from the initial phase revealed that fake news tends to exhibit more negative sentiment than true news across most datasets, with the notable exception of disaster-related content, where fabricated posts display artificially positive tones that downplay event severity. To enhance robustness, we expanded the analysis using additional datasets, such as COVID-19 and sarcasm corpora, and incorporated multiple sentiment scoring frameworks (VADER, AFINN, and TextBlob). The extended results consistently confirm that true news maintains higher sentiment scores than fake counterparts, reaffirming emotional negativity as a key marker of misinformation. These findings highlight the potential of affective computing in supporting automated fake news detection and contribute to understanding how emotional manipulation influences misinformation spread online.

Keywords

Fake News, Sentiment Analysis, Artificial Intelligence, Natural Language Processing, Misinformation Detection, Social Media.