PROJECT REPORT

SENTIMENT ANALYSIS ON SOCIAL MEDIA USING NLP METHODS WITH NAIVE BAYES AND SUPPORT VECTOR MACHINE (SVM) ALGORITHMS

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ABSTRACT

Social media has evolved into a significant medium where individuals openly share their views, experiences, and emotional expressions. In the current era of big data, analyzing sentiments expressed through these platforms becomes increasingly essential, particularly in understanding public reactions to specific events, services, or products. This research focuses on the utilization of Natural Language Processing (NLP) techniques to analyze social media sentiments. The process includes collecting data from various platforms, applying text preprocessing methods such as tokenization and stemming, and subsequently using classification algorithms like Naive Bayes and Support Vector Machine (SVM) to carry out sentiment classification. Based on the findings, NLP-based sentiment analysis demonstrates a notable level of accuracy, with an average precision rate of approximately 87%, depending on the selected algorithm. The Naive Bayes method shows reliable performance and faster processing, especially with larger datasets. Moreover, the study highlights that proper text preprocessing, including noise removal and the elimination of stopwords, plays a vital role in boosting model performance. Ultimately, the outcomes of this study are expected to contribute to the development of effective sentiment analysis solutions and provide practical insights for applications across multiple sectors, including marketing, politics, and public services.

Keywords: Sentiment Analysis, Social Media, Natural Language Processing, Naive Bayes, Support Vector Machine.