

Sentiment Analysis of Social media

Abstract

The primary goal of this study is the challenge sentiment on Twitter and other social media websites is the theme of this study. By classifying tweets into neutral, positive and negative categories, we build sentiment analysis models using machine learning techniques such as Support Vector Machines (SVM) and K-Fold Cross Validation Create a text view using Kaggle dataset of tweets 1.6 million uses -We use images cognitive and natural language processing (NLP) to improve content interpretation Metrics such as accuracy and mean square error (MSE) show that early results in perceptual segmentation no show promising performance. Deeper insights into user behavior come from this combination of NLP and image recognition, encouraging intelligent decision-making and sophisticated social media conversations.

Introduction

Twitter and other social media sites have become important platforms for sharing ideas and emotions. However, the wealth of different perspectives often leads to miscommunication and conflict. In such a scenario, correctly interpreting the sentiment underlying the comments is important to enhance productive discourse and reduce friction Using machine learning to analyze tweet sentiment in which our work attempts to solve this problem by reflecting the thoughts and feelings of the users who are telling the stories.

Problem Statement

The issue at hand is that the real sentiment underlying tweets cannot be identified, leading to abuse and controversy on social networking sites like Twitter, Instagram, Facebook, etc. Our project aims to build a sentiment analysis model that reliably classifies tweets into three categories: neutral, positive, and negative can be included. By doing this, we hope to make it easier for users to understand their underlying motivations and emotions, helping to reduce potential arguments and foster more positive interactions has gained popularity on social media. We will also add image recognition for better understanding of sentiments.

Method and Data

Support Vector Machines (SVM) and K-Fold Cross Validation are two machine learning techniques that we like to use for sentiment analysis of tweets. The SVM was chosen because of its ability to handle both categorical and numerical data, as well as its effectiveness in high-dimensional domains. By training and repeatedly training the model on different subsets of datasets, K-Fold Cross Validation will allow more detailed evaluation of the model.

We use a dataset of 1.6 million tweets obtained from Kaggle. It has six columns: Target (indicating the polarity of the tweet), Ids, Date, Flag, User, and Text. We will first process the data to handle issues such as null values from videos or emojis in tweets. Python will be the primary programming language for data processing, modeling, and analysis.

Both natural language processing (NLP) and image recognition can significantly contribute to sentiment analysis of Social Media data by improving understanding of text and extending the analysis to include visual content added recognition -Considers visual cues A robust insight into emotion and behavioral expression in the forum is enabled by this integration, which in turn improves emotion classification accuracy and provides a deeper understanding of user behavior. As a result, organizations, scholars, and individuals can reach more informed conclusions, participate in important exchanges, and have positive discourse on social media.

Results

The sentiment analysis model works well in classifying tweets into positive, negative, and neutral sentiments from primary sources. The efficiency of the model is evaluated using the mean squared error (MSE), error rate, and accuracy coefficient; Higher precision and lower MSE and error rate values indicate better sensitivity classification.

Discussion

Sensitivity analysis research can be very helpful in making better decisions in different situations. Through accurate social media sentiment translation, companies can analyze public opinion, identify new trends, and adjust their policies accordingly. People can also benefit from understanding the emotions underlying the comments inside, and leading to better informed communication and less disagreement in online discussion. Providing gives you the ability to make smarter choices.

