**Twitter Sentiments analysis using Machine Learning**

**Introduction :**

Twitter sentiment analysis makes use of Natural Language Processing to evaluate a speaker's, writer's, or other person's mood and emotions through the piece of text. Through Sentiments Analysis, we can determine if a tweet of a user is positive, negative or neutral. Social networking platforms such as Twitter, Facebook, Instagram, YouTube, etc. have been so popular for days now. They allow people to communicate, create networks, and share thoughts easily and promptly. Twitter has become an excellent medium for opinion creation and presentation. Twitter Sentiments Analysis can be used for real-time applications which can be a very helpful business.

**Project Concept :**

**Abstract :** Analysis of sentiments is the method of deciding whether the sentiments in the text are positive, negative or neutral. It is also known as material polarity or mining of opinions. The growth and advancement in social media platforms engaged a huge number of users. Social media platforms like twitter where users can post their tweets in 280 characters. Because of the limited number of characters in tweets, it becomes easy for sentiment analysis. On Twitter 550 millions of tweets are posted daily. Twitter also represents all age group people and also a fair representation of gender. Therefore, the sentiment analysis of twitter data becomes somewhat general sentiments of society.

**Objectives :**

Sentiment analysis can be defined as a process that automates mining of attitudes, opinions, views and emotions from text, speech, tweets and database sources through Natural Language Processing (NLP). Sentiment analysis involves classifying opinions in text into categories like "positive" or "negative" or "neutral". It's also referred as subjectivity analysis, opinion mining, and appraisal extraction.

The words opinion, sentiment, view and belief are used interchangeably but there are differences between them.

• Opinion: A conclusion open to dispute (because different

experts have different opinions)

• View: subjective opinion

• Belief: deliberate acceptance and intellectual assent

• Sentiment: opinion representing one’s feelings

It is also including many tasks such as sentiment extraction, sentiment classification, subjectivity classification, summarization of opinions or opinion spam detection, among others. It aims to analyse people's sentiments, attitudes, opinions emotions, etc. towards elements such as, products, individuals, topics, organizations, and services.

Sentiment analysis is the automated process of identifying and classifying subjective information in text data. This might be an opinion, a judgment, or a feeling about a particular topic or product feature.

The most common type of sentiment analysis is ‘polarity detection’ and involves classifying statements as Positive, Negative or Neutral.

* To implement an algorithm for automatic classification of text into positive, negative or neutral.
* To determine the attitude of the mass is positive, negative or neutral towards a specific topic/subject or matter of interest.
* Graphical representation of the sentiment in the form of graphs.

**Literature Review :**

Sentiment analysis of in the domain of micro-blogging is a relatively new research topic so there is still a lot of room for further research in this area.Decent amount of related prior work has been done on sentiment analysis of user reviews,documents, web blogs/articles and general phrase level sentiment analysis. These differ from twitter mainly because of the limit of 140 characters per tweet which forces the user to express opinion compressed in very short text. The best results reached in sentiment classification use supervised learning techniques such as Naive Bayes and Support Vector Machines, but the manual labelling required for the supervised approach is very expensive. Some work has been done on unsupervised and semi-supervised approaches, and there is a lot of room of improvement. Various researchers testing new features and classification techniques often just compare their results to base-line performance.

**Problem Definition :** To find and analyze the emotions of the tweet’s is either positive, negative or neutral. For which we need the datasets containing a huge amount of tweets. Onthat datasets we’ll be able to train and test our model and try to understand the scenario of different tweets.

**Scope :** It has a huge scope in all the domains, such as marketing, politics, art, films, manufacturing, finance, etc. Consider an example, where a political party wants to know whether they’ll be able to win the election in that particular region or not or what are changes they should make to help the society, for this they can use twitter sentiments analysis which’ll help them to understand whether the people of the particular region are happy, sad or neutral with their work. Consider another example of movies, where if a movie maker wants to know whether the teaser of the movie is successful in the audience, what kind of the business they can get when it gets launched, etc. The tweets tweeted by the users after watching the trailer helps movie makers analyze/predict the success of the movie.

There is an abundant need of analyzing sentiments of the tweets in all the domains.

**Technology Stack :**

1. Python.
2. Web scrape using twitter’s API.
3. Google Colab.

**Benefits for environment and society :**

1. Manufacturers or developers of the products of the can review their product by analyzing the sentiments of the people. That is how people react to their products.
2. Marketing personnel can see how people are reacting to their advertising campaign. They can analyze the sentiments related to this.
3. Political parties can see how their political campaign is running and how people are reacting to it. They can analyze which issue to be raised to not.
4. Filmmakers can see how people are reacting to their newly released movie, by analyzing the sentiments of the people.