

Predicting the Popularity of Trending Videos in Youtube Using Sentimental Analysis

G. Mohana Prabha, B. Madhumitha, R. P. Ramya

Abstract—The recognition of social media is growing hastily because it is simple in use and easy to create and percentage snap shots, video even from the ones customers who're technically ignorant of social media. In social media particularly in YOUTUBE, detection of sentiment polarity is a completely hard task due to a few obstacles in current sentiment dictionaries. In present dictionaries there are not any proper sentiments of terms created by way of network. For the past several years YouTube has been via some distance the largest user-pushed online video provider. While a lot of these movies comprise a tremendous wide variety of user comments, little paintings has been executed so far in extracting tendencies from those feedback due to their low information consistency and nice. In this venture, we can perform sentiment analysis of the YouTube feedback related to popular topics the use of Natural Language Processing using machine getting to know techniques. The Natural language processing is the discipline that research the way to make the machines study and interpret the language that the humans use, the herbal language. But within the machines global, the phrases no longer exist and they're represented by using sequences of numbers that the device represents with a character whilst displaying them on display. The Sentiment Analysis is the call of the hassle that with a sentence or textual content the device receives succesful to analyze and are expecting with the maximum precision viable the sentiment with a purpose to be received with the aid of a person while it or the contextual opinion reads associated with something. We display that an evaluation of the emotions to perceive their developments, seasonality and forecasts can offer a clean image of the affect of real international activities on user sentiments. Support Vector Machine algorithm can implement as system studying set of rules to improve the accuracy in sentiment evaluation to categorize the remarks as advantageous, poor and impartial. Experimental outcomes suggests that the proposed system enhance the overall performance of the machine in actual world environments.

Index Terms— Social media, Natural language processing, Sentiment evaluation, Machine studying, Popularity prediction

I. INTRODUCTION

Opinion mining (every so often referred to as sentimental evaluation) Refers back to the usage of natural language refinement, textual content evaluation, Computational fundamental, and biometric into systematic emerge as aware of, extract, quantify, and have a observe perceptual state and abstract facts. Sentiment evaluation is substantially carried out into voice for consumer objective which include critiques and inspection results, on-line ,social media and health industry substances of programs which variety across advertising to customer support to clinical medicinal drug. Usually speakme, sentimental evaluation interests to

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resolve thoughts-set of narrator, author and any other specific situation alongside recognize for a few subject or general context polarity or emotional reception for a record, communication, occasion. The thoughts-set may be a decision or valuation (appraisal principle), intuitive nation, expected emotional conversation

1.1 Methods in Sentiment Analysis

Actual approach to sentimental analyze may group to three most important classes: information-primarily based strategies, analytical approach, combined processes. Learning-dependant totally methods classifies content with the aid of have an effect on categories primarily based at the presence of unambiguous have an effect on words inclusive of joy, sorrow, scared, and annoying. Few know-how depends no longer exclusively on index apparent have an effect on phrases, though assigns arbitrer phrases a probably "affinity" for unique feelings. Analytical techniques coverage over aspects from system gaining knowledge of along with latent semantic evaluation, support vector machines, "bag of words" and "Semantic Orientation—Point smart Mutual Information". Many refined techniques trial and finds heir of a emotion also goal (i.E., the instance approximately which change can be felt). To fetch the suggestion of text and obtain the factors about which narrator has conclude, the semantic relations of phrases can be useful. semantic dependence members of the family are acquired through in-depth reading of a context. Combined processes advantage over each device gaining knowledge of and factors from know-how illustration which include ontologies and semantic networks to be able to locate semantics which can be conveyed into subliming, example., via evaluation of principles which doesn't externally bring similar records, however those can be internally related to different approach which works similarly. Exposed supply software equipments install gadget mastering, records, language refinement strategies towards automatic sentimental evaluation for immensely colossal accumulations about contexts, along with net sheets, on-line information, social groups, on-line critiques, net blogs, and gregarious media. Erudition-predicated structures, then again, make utilization of openly usable sources, for fetching the syntactic ,perceptual records cognate to common language conceptions. Sentimental analyze withal could be done over visual data, i.e., pictures as well as films (optically discern Multiple sentimental evaluation). Foremost techniques on here path is Sentiment Bank utilising an attribute entity couple illustration for visible

text material. In additament, those considerable domination of emotion class processes depends on the word source version, that is independent of text, symantic or word arrangement. Methods which analyze the emotional predicated of how content organize the construal for long terms has proven higher end output, however they into extra defination ahead.

1.2 Applications of Sentiment analysis

Usually convivial network accommodations, shopping website, customers may offer textual content overview, remark or comments to the gadgets. These consumer-generated textual content provide an opulent origin of utilizer's emotion critiques of many products. Probably, for a product, such as text can reveal both the cognate speciality as well as aspects of the product as well as the user's emotions for every function. Object's characteristic/factors defined within a textual content plays a identical position within meta-statistics on context material-predicated filtration, though the older are far valued for the suggested contrivance. From those factors are widely cited with the aid of users of their evaluations, they can be visible because the most important functions that may notably impact the consumer's experience at the object, while the meta-statistics of the object (typically supplied through the manufacturers in preference to purchasers) can also forget about functions which might be worried by using the customers. For one of a kind gadgets with commonplace capabilities, a consumer may additionally provide distinct sentiments. Also, a function of the same item might also obtain one of a kind sentiments from exceptional customers. Users' sentiments at the functions can be depended as a multiple dimensional score, showing their desire over gadgets. On the Basis, the characteristic/factors and the emotions fetched from person-originated text, a mixed suggested contrivance may built. These are varieties for encouragement to advise a aspirant product for a consumer. The first inspiration is the aspirant object has several commonplace factors within the person's preferred products, even as the secondly one inspiration is that the aspirant product regains a highly emotion on its factors. For a favorable product, there is far plausible for Taking distribution of as true with that items with the same abilities may have a kindred characteristic or utility. So, the ones objects may even probable to be favored by way of the client. Over the alternative hands, to a shared aspects of aspirant objects, one of a kind users may adscitiously provide efficacious sentiment to definitely one in all them at the same time as supply awful sentiment to each other. Limpidly, the immoderate valuated product shall be suggested to the patron. Predicated over this two inspirations, a aggregate rating for homogeneous attribute as well as emotion score may be built for every aspirant object. Exceptional are the hassle for the emotion assessment, utilizing sentimental analyze over evaluations and comments moreover deal the challenge of unsolicited mail as well as partial opinions. One course of work is targeted on comparing the helpfulness of every evaluation. Review or remarks poorly indited is scarcely ever benign for recommender contrivance. Besides, a evaluation may be designed to restrict profits of a aim product, as a end result be perilous to the recommender contrivance even it's miles

felicitously indited. Researchers supplementally placed that perpetuated and expeditious form of purchaser-engendered text need to be dealt with in a special manner. An thrilling end end result shows that expeditious form reviews are on occasion more utilizable than lengthy form, due to the authenticity it's miles less tough to filter out the noise in a brief form textual content. For the long form text, the growing duration of the textual content does not continually distribute a proportionate magnification of the type of faculties or sentiments in the textual content. A human assessment element is needed in sentiment assessment, as computerized systems aren't capable to analyze historical tendencies of the individual commenter, or the platform and are often categorised incorrectly of their expressed sentiment. Automation affects approximately 23% of comments which can be efficaciously categorized with the avail of utilizing human beings. However, human beings frequently dissent, and it's far argued that the inter-human acquiescent provides an better bound that automated sentiment classifiers can subsequently gain.

II. RELATED WORK

Uryupina, Olga, et al.[1] addressed the specifics of the YouTube records, we move past usually used in step with-file sentiment labels: and distinguish between user sentiments expressed with recognize to the video and the product mentioned at the comment stage. This offers valuable annotations for experiments on targeted sentiment analysis, particularly, on online recognition management at the social media and social streams. And additionally provide statistics for different NLP obligations, as an instance, unsolicited mail detection and file class on social streams and joint modeling of those phenomena. It need to be stated that, several annotation initiatives were proposed these days to expand sentiment analysis fashions adapted to social media, focusing in particular on Twitter. While the latter presents precious data for extracting and monitoring reviews, the derived corpora are volatile: because of the Twitter distribution restrictions, the tweets are simplest represented with their IDs, without express inclusion of their text. End users are required to apply the Twitter API to download the tweet messages.

Poecze, Flora, et.Al,...[2] brought an method to degree conversation effectiveness of YouTube game enthusiasts by means of studying the content material published on the facebook account emblem sheets. The objective is to become cognizant of connection for these data categories with Utilizer-engendered measures on accounts of facebook, which includes quantity in relishes, opinions, apportions, highlighting those outcomes by sentimental evaluation of opinions displaying under experimental publishments. Predicated at evaluation for homogeneous attributes and variations related to facebook measures and sentiments suggest scores, this is able to give conclusion which is the commentary of verbal expression sentiment had a corresponding functions located in ken-how of text material apperception. Observing pictures, despite the fact that



sentimental positivity mentioned preparatory facebook measures effects also substantiated the publications in the centre class does not simply obtain sizably voluminous quantity in consumer-engendered acts, in additament this inspired sublime indited reviews. However, categorically instances, sentimental analysis showed obnubilated negative reviews, credible discussions within remark categories. Sentimental analysis gives mild over sure recreation-associated poor utilizer feedback in integration to massive positive comments over subsections that had not now get hold of recognitions in line with their Facebook metrics.

Soleymani, Mohammad, et al.,[3] furnished a consummately opulent avail for analysis and sentimental evaluation and upgraded the amendment of automatical sentimental evaluation. Data-primarily predicated sentimental analysis has being the customary conveyor on the place and particularly currently has sentimental evaluation emerged different modality, along with verbalization also imaginative and prescient, all commenced to be taken into consideration. Sentiment analysis objectives to routinely denude the underlying mindset it held towards the entities. The assembling for those sentiment above the populace shows experimental sample also contain several packages. Present content-primarily predicated sentimental analysis is predicated for the development of lexicon and system studying samples which study sentiments from immensely colossal content collection. Sentimental evaluation from content presently broadly utilized for consumer delight evaluation also emblem approach analysis, amongst other resources. Using the expansion of convivial publications, multimodal sentimental analysis is yare for conveying incipient chances using the advent in complementary information transmits about ameliorating, transcending textual content-predicated sentiment evaluation. Considering sentiments is identified via perceptual hints this departs, including face and choral exhibits, multimodal sentimental evaluation provides assuring approaches in reading face and choral opinions further for transcription or text. The methods influences emotional reputation also text assumption for deciding the underlied polarities and scope for a person's sentiments. In the surveys, outline sentiments and the quandary of multimodal sentimental analysis and evaluate new tendencies in multimodal sentimental analysis in the special areas, together with verbalized analysis, snap shots, videos, web blogs, and human-gadget as well as human-human interaction.

Rangaswamy, Shanta, et al.,[4] implemented the have an optical canvassing of that is cognate for evaluation in critiques, sentiment, calculations, postures, feelings of clients that expresses gregarious multimedia, different networked assets. Innovation in convivial multimedia areas supplementally magnetized customers for sharing videos in websites. YouTube might be the trendiest among all, with a count of millions of kineticism pictures posted with betokens of the clients and a billion of remarks for all the kineticism pictures. Online clients consider the reviews and sentiments for the videos that optically canvass for some websites. Relegation of the videos is growing more extended location of examinations, elevating the amount of videos that are shared on-line via some sites. Popular,

sentimental analysis endeavors for deciding mind-set of substantial members by deference on the interest topics or allover text polarity of the texts. This refers, either or not comments given in text can be relegated about instance of high-quality, negative, impartial, equipollent. MPEG media is widely used and a prosperity in upgrading interoperable accommodations which supply videos for the costumers in a limit of contrivances. Even though, media utilization transcends the common playback of the media asset and gears more proximate to the rich person revel is predicated on affluent metadata and text material definition. This recommends a methodology to extract also analyze metadata for videos, accompanied via cull associated with the videos text.

Zadeh, Amir, et al.,[5] applied the machine which is annotated with labels for subjectivity, sentiment intensity, per-frame and in line with-opinion annotated visual functions, and in line with-milliseconds annotated audio capabilities. Furthermore, we present baselines for destiny studies in this direction as well as a brand new multimodal fusion method that mutually fashions spoken phrases and visual gestures. This paper introduces the MOSI dataset for multimodal sentiment depth and subjectivity analysis. The dataset is the first multimodal sentiment analysis dataset with sentiment intensity and subjectivity annotations at opinion degree. It has guide and automated annotations of text, visible and audio functions. Alignment between modalities opens the door to future multimodal studies of language. A new representation that captures the join distribution of phrases and gestures is offered primarily based on statistical observations at the dataset. It is shown that using information extra than simply text can help models make better sentiment depth predictions. The same is also genuine for subjectivity. We desire that this dataset opens the door to greater unique studies of sentiment and subjectivity analysis in Multimedia content. Finally, the dataset is publicly to be had for down load with all of the extracted features.

III. EXISTING METHODOLOGIES

Sentiment evaluation has emerged as a widespread and powerful technique for opinion mining of internet information analysis. Sentiment evaluation is a contemporary studies region in textual content mining. It is the stem of natural language processing or gadget gaining knowledge of methods. It is the important assets of decision making and can be extracted, recognized, evaluated from the online sentiments evaluations. The amelioration of the person-engendered content material has opened incipient possibilities for studies inside the subject of sentiment analysis. The evolution of internet era has led to an immensely colossal quantity of consumer engendered content material and has eminently modified the manner we control, prepare and engage with facts. Due to the abundance of utilizer reviews, critiques, remarks, feedbacks and hints it is essential to explore, examine and organize the content for efficient decision making. In the beyond years



sentiment evaluation has emerged as one of the popular techniques for information retrieval and net facts analysis. Sentiment analysis, withal referred to as opinion mining is a subfield of Natural Language Processing (NLP) and Computational Linguistics (CL) that defines the area that research and analyzes humans’s opinions, critiques and sentiments. This present contrivance analysis a model for sentiment analysis of twitter tweets utilizing Unigram technique of Naïve Bayes and K-NN type set of rules.

3.1 NAIVES BAYES CLASSIFICATION

Predicated on Bayes Theorem with notional theorization impartial amongst analyst, the Naïve Bayes type approach comes into photo. In facile language, a Verdant Bayes classifier postulates the presence of a culled article in a category is unrelated to the subsistence of every other characteristic. The Verdant Bayesian classifier is predicated on Bayes’ theorem with independence posits between presagers. An Ingenuous Bayesian version is facile to construct, with out an intricate iterative parameter estimation which makes it specially utilizable for terribly immensely colossal datasets. Despite its simplicity, the Verdant Bayesian classifier often does extraordinarily nicely and is widely utilized because it conventionally outperforms more sophisticated type strategies. Algorithm Bayes theorem provides a way of calculating the posterior opportunity, P(ceffect of the value of a presager (x) on a given class (c) is independent of the values of other presagers. This posit is kenned as class conditional independence

$$P(c | x) = (P(x | c)P(c)) / (P(x)) \text{ ----- Eqn(1)}$$

P(cchance of class (c, goal) given prognosticator(x, attributes).

P(c) is the prior opportunity of class(c) is the probability that is the opportunity of soothsayer given class.

P(x) is the earlier opportunity of soothsayer

The Naives bayes class best analyzed positive and terrible evaluations and offer reduced precision in type.

3.2 K-NN CLASSIFIER

K-NN is a type of instance-primarily based learning, or lazy studying where the characteristic is most effective approximated domestically and all computation is deferred until category. It is non-parametric approach used for classification or regression. In case of type the output is elegance membership (the most prevalent cluster may be again) , the object is assessed by using a majority vote of its friends, with the item being assigned to the class most commonplace amongst its k nearest pals. This rule really keeps the complete education set during learning and assigns to each query a class represented via the general public label of its ok-nearest neighbours inside the education set. The Nearest Neighbor rule (NN) is the simplest form of K-NN when K = 1. Given an unknown pattern and a training set, all the distances between the unknown pattern and all the samples inside the schooling set can be computed. The distance with the smallest value corresponds to the pattern inside the training set closest to the unknown pattern. Therefore, the unknown sample can be labeled based totally at the classification of this nearest neighbour. The K-NN is an smooth set of rules to understand and put in force, and a powerful device we have at our disposal for sentiment

evaluation. KNN is powerful because it does now not count on whatever approximately the statistics, apart from a distance measure can be calculated always between instances. Shown a unidentified pattern also an education list, all of differnces between the unidentified samples and every sample inside the trained set is calculated. The distances with the lowest fee relates to the patterns inside the trained set related to the unidentified samples. Algorithm steps as follows:

- for all the unknown samples UnSample(i)
- for all of the regarded samples Sample(j)
- compute the gap among Unsamples(i) and Sample(j)
- cease for
- finding the K smallest distances
- Find the equivalent sample Samples(j1),...,Samples(jK)
- assigned UnSamples(i) to an elegance which noticable extra regularly
- stop

An overall results for KNN classifier commonly decided by using the presence of K also the gap measure implemented.

IV. POPULARITY PREDICTION & RESULT BASED ON MACHINE LEARNING TECHNIQUES

The sentences that represent observations or attitude this is expressed as high quality or terrible are known as as sentiments. The users put up their opinions in social media platform. These reviews are extracted in the shape of unstructured records. The unstructured dataset is converted into established shape then extracts capabilities from established evaluate. The functions of the words are decided on and then classification technique is applied on extracted capabilities to classify them into its sentiment polarity that is specifically both superb or poor. Feature phrases representation primarily based on Support Vector Machine is the primary set of rules proposed via records retrieval researchers to represent text corpus. Sentiment Analysis is the system of locating the opinion of person approximately a few topic or the textual content in consideration. It is likewise called opinion mining. In different phrases, it determines whether or not a piece of writing is high-quality, poor or neutral. Now-a-days, people use Youtube movies to express their opinion about some thing. It has been beneficial in diverse domains like political, business and academic domain. Companies have been receiving polls approximately the products they manufacture. Previous studies became to classify the emotions into two training i.E. Positive and negative. But it was not useful for decision making. Here choice making refers to the solution for improving the nice opinion of the person concerning the domain in consideration. Hence need become to discover the possible motives behind sentiment versions to make choices well. There are many such examples in diverse domain names like bollywood, political, healthcare and enterprise



area. It seems very hard to discover the exact motives in the back of sentiment variations as variety of tweets are more than thousands for the target event. The proposed paintings put in force Support Vector system algorithm to classify the feedbacks that are gathered from framework. It described as input and output layout; vector area named as participation and fine or negative is an output. The word rely growth, if boom the file length. Practically notably more capabilities created that may increase class accuracy. SVM venture to research and simplify the enter/output mapping process. In this text type enter is series of files and output process is their corresponding class. It solves an optimization trouble of locating the most margin hyperplane among the training. This is basically required to avoid overfitting. Basically it's far a linear classifier isolating the instructions which can be separated with the assist of linear choice surfaces called hyperplanes. Foe instructions having binary capabilities SVM attracts a line between the training and for classes having more than one functions hyperplanes are drawn. However it can be used for classifying the non linear facts additionally by means of reworking the feature area into the better dimensional area in order that non linear information in higher dimensional may be separated easily through a hyperplane. The proposed work is proven in fig 1.

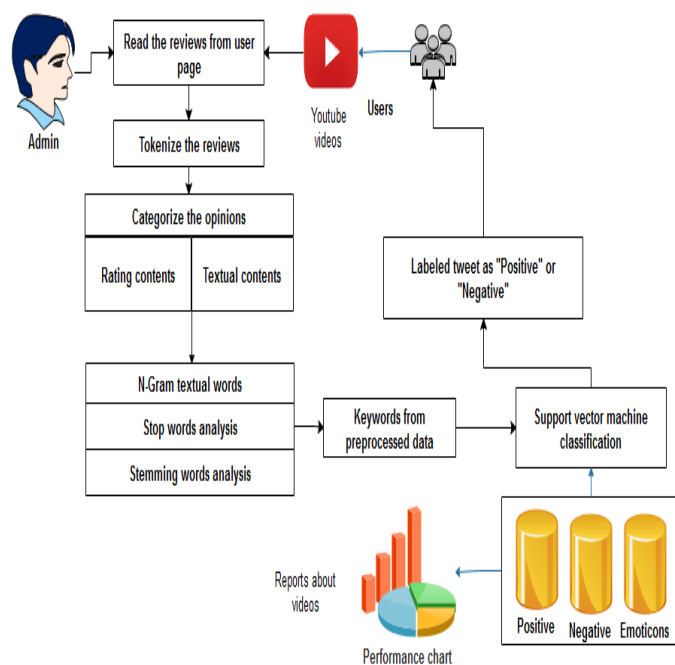


Figure 1: Proposed Framework

The algorithm of the proposed algorithm is derived as follows:

ALGORITHM – SVM CLASSIFIER

Input: Labeled Dataset

Output: nice, terrible, impartial polarity with synonym of phrases and similarity among words

Step-1 Pre-Processing the tweets:

Pre-processing ()

Remove URL:

Remove unique symbols

Convert to decrease:

Step-2 Get the Feature Vector List:

For w in phrases:

Replace two or extra phrases

Strip:

If (w in stopwords)

Continue

Else: Append the document

Return function vector

Step-3 Extract Features from Feature Vector List:

For phrase in characteristic listing

Features=phrase in feedbacks

Return functions

Step-4 Combine Pre-Processing Dataset and Feature Vector List

Pre-processed report=path call of the report

Stopwords=file route call

Feature Vector List=document route of characteristic vector list

Step-5 Training the step four Apply classifiers lessons

Step-6 Find Synonym and Similarity of the Feature Vector

For every sentences in feature list (n=three)

Extract characteristic vector inside the opinion()

For each Feature Vector: x

For every Feature Vector: y

Find the similarity(x, y)

If (similarity>threshold)

Match discovered

Feature Vector: x= Feature Vector: y

Classify (x, y)

Print: sentiment polarity with comparable feature

phrases.

The above pseudo code is used to are expecting the polarity about multiclass based on features extract from social video. These capabilities may be matched with vector to are expecting the similarity threshold and classified as class call.

V. CONCLUSION

Classification and detection of Sentiment Polarity of user remarks in YouTube is a difficult mission for researchers to date. A lot of labor is completed in this regard however still have an extended manner to head to conquer this trouble. In this paper gift a device Youtube Popularity Prediction the use of Sentiment Analysis in Social Network for customers, which are expecting the popularity of the videos among several events, academic and different contents primarily based at the text reviews which are getting from social networking websites. The blessings of the use of this device are that it facilitates in studying motion pictures information and helps to rate prediction based on person feedbacks. The proposed work of Support Vector Machine (SVM) offer stepped forward effects in sentiment analysis with accuracy in actual time environments.

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