

Control on Predatory Comments on Social Media Platform using Full-Text Search Algorithm

B.Mathangi, Anisha Rajesh, Disha Dikshita Behera

Abstract: Social media is quickly evolving in front of our eyes and it is almost impossible to reject and hide from this new form of media. Not only is it an important part of socialization within peer groups but now it is used to market and motivate people to become a part of a larger community. But, young creators in this community are suffering from child predatory comments from users which consists of un-parliamentary words that affect the society a lot. One such social media platform, YouTube, had recently faced a lot of trouble due to the unavoidable predatorily comments. Since the existing system disables the entire comment section by observing some predatory comments, the restriction of interaction and feedback opinion will affect the creator's efforts. This project focuses on discarding only those comments that contains profanity and vulgar words, on run time, before its post. This system lets commentators even for negative feedbacks, as comments are one of the most important features in social media platform, that lets both users and viewers to explore more on their subjects. The dataset is trained from a pre-defined database that consists of offensive and slang terms mostly used in media platforms. The predefined set is connected with ElasticSearch open-source full text engine that enables run time search. The comment typed by the user is tokenized word by word and checked with the set using FullText Search algorithm. If found any, the comment is declined from posting further leaving an notification behind, thereby enabling the comment section still active for normal and kid friendly interaction.

Index Terms: Full-text search, Elasticsearch, Predatory, Scrutinize.

I. INTRODUCTION

Social media has been ingrained into our society today that is virtually impossible for people to discard it. Irrespective of ages, every generations has indulged themselves into these platforms that has made them addicted to it. Today, web based life play an undeniably increasingly essential job in the life of society since clients invest a ton of energy on the web and they see online life as an imperative wellspring of data about issues which clients are worried about.. Platforms like Facebook, YouTube, Snapchat etc practices an age diversity culture, where different generation people upload and communicate with strangers. Web based life progressed toward becoming generators of the standard culture and new patterns.

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In such manner, it merits referencing the way that the advancement of internet based life, as YouTube, opens new open doors for the improvement of virtual social networks joined by their basic advantages. Clients invest increasingly more energy web based building up their virtual social relations on the web. Internet based life become an essential piece of their life and virtual networks made with the assistance of and inside online life have an imperative impact in the improvement of socio-social standards and gauges that influence the advancement of fundamental moral and social standards of individuals and impact their way of life considerably. Apart from being a great platform to improve one's communication level, many social media platforms have also influenced many problems in individual's life. One such communication section is called the comment section. Many social media platforms provide comment section down below individual post to comment or give feedback on the respective articles being published. Apart from criticism, many users have observed disturbing and un-parliamentary words and phrases on comment section. One such platform is YouTube that has recently observed a lot of child predatory comments on videos featuring or uploaded by minor aged users. Users who are family daily bloggers have also experienced the same. The action taken by the platform was by disabling the entire comment section that featured predatory comments. But disabling is not an efficient solution to the problem. As The comments section can play a big part in this. YouTube isn't just a place to watch videos. Individuals likewise use it to interface and remark on what they watch. This may be with the individual who posts the video or with different watchers. Like every single social medium channels, it is a two-way road. On the off chance that you need to utilize YouTube to bring issues to light about your image and what you sell, you have to manufacture an association with your gathering of people. The working of comment section or feedback platform in social media has never been in control. Users still observe many abusive, illiterate mannerism from subscribes who share their thoughts using offensive and vulgar languages. As an community that allows people to share and interact their thoughts and life with all ages, These activities does disturb many users and subscribers, especially minor girls and also indulge people who are innocent into these. Even if the ratio of these activities is less but the influence and its affect is a lot. Users have sometime turned the section into a war zone where people accuse others to not indulge into these manners, thereby creating a dramatic issues which indeed leads to more cursing of each others. YouTube allows users to control their comment section manually through settings feature.



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YouTube users need to manually change the settings that allows them to permit certain comments. Recent events have observed a lot of predatory comments in videos featuring minor aged girls. The comment section has been observed to be the most affected by this issue. YouTube has also had issues in its recommendation system. Videos that are recommended while watching certainly leading users to another loop whole. These problems were also observed in daily family vloggers, which featured young kids in their post. It was observed that there were child predatory comments including time-stamp that were mentioned followed by unparliamentarily, abusive word. This issue had lead to YouTube losing a lot of sponsors from companies like Disney Walt who refused to advertise their films in YouTube communities. Many influencers had also left the platform do to the uncontrollable languages being used in the comment which reflected and affected many users. YouTube had taken severe action by disabling the entire comment section thereby hiding the feedback feature which was observed as an inefficient solution to the problem. The section in many videos that were reported with these issue were disabled, thereby restricting the users to interact and share their opinion with the channel users or subscribers.

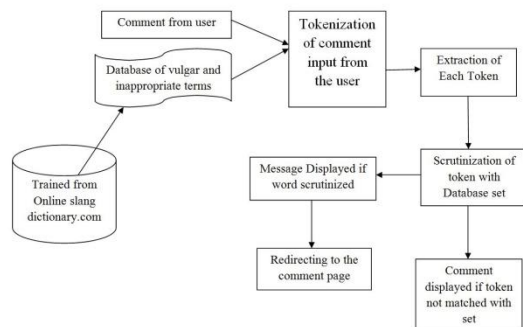


Fig 1 : Architecture Diagram

The proposed system does not take the comment blindly from the user. Rather it checks for predatory words using Full text search algorithm even before posting it on the section. The comment is cleaved word by word and is scrutinized with a trained dataset using Elasticsearch cloud based application. If found any word, an message is displayed to the user, else the comment as typed is displayed in the section. Thereby restriction takes place before posting itself rather than disabling the comment after posting which thereby allows the comment section to be visible and allows user to interact.

II. LITERATURE SURVEY

Launched at 2005, YouTube has become one of the most interactive and influencing social media among the peers. Different community, age, gender share their thoughts with users from different parts of the world through videos. Being both entertaining and educational interface, YouTube has observed over a millions of videos with each having more than million views and likes. One of the interactive section is the comment section where subscribers/users post their ideal thoughts about the content of the video. Apart from being the ideal motive of the purpose, still people use these platform to spread abusive and disrespectful thoughts which are not even related to the content of the video.

Any social media platform, regardless of interaction, blindly takes an comment from the user, posts it in the video. If found

any abusive, action will be taken only if a user reports issue on the channel. Which again is a manual work. Eventually, when the community receives any report issue, it basically disables the entire comment section, thereby restricting people to interact with the user. Disabling the comment section means, hiding or blocking the posted and hereafter posting comments from visibility. This solution might solve the issue, but destroys the purpose of the platform features.

S/no	Title	Concept	Algorithm	Drawback
1	A Comparative Analysis of Common YouTube Comment Spam Filtering Techniques	•Survey Paper on various spam filtering methodology used	AGA K-NN LR	Checks only for spam links in the comment section.
2	TubeSpam: Comment Spam Filtering on YouTube	Checks for spam, ad or irrelevant comments on the comment section	TubeSpam	•Limited content analysis. •Over-specialization
3	Identification of Spam Comments using Natural Language Processing Techniques	•Identifiacion of comments through NLP technique which is Pre-Defined	Natural Language Processing Technique	Filtering process is carried out after the display

Table 1 : Literature Survey and its drawback

Being an interactive and knowledgeable platform, comment sections are one of the most important feature in any social media. These feedback helps improve or gain confidence to the users when comments about the content of the video is being shared. Thoughts and suggestion on the video and its ideology is definitely the greatest impact on the user who run the channel. But sometimes people get to an extent where they not only share spam comments but also predatory comments. Recently YouTube has observed a major issue regarding the child predatory comments on videos featuring minor aged girls. Predatory comments are abusive, unparliamentarily, vulgar and disrespectful languages being used while disparaging their thoughts. These comments have recently been explored even in daily family vloggers channel, which also features children in their video. Control on children from not viewing these videos is impossible

S/no	Title	Concept	Algorithm	Drawback
4	A Bayesian Approach to Filtering Junk E-Mail	•Probability of junk mail is calculated with the predicted system	Naive Bayesian classifier	•Implementat ion / excution of code is done after mail is sent.
5	YouTubers' impact on viewers' buying behavior	Survey on impact of subscribers behaviour	Linear Searching method	•Survey conducted reflects that maximum comments are corrupted
6	A Self-supervised Approach to Comment Spam Detection based on Content Analysis	Pre-defined set on bag of words and keyword links are compared	Content analysis	•Pre defined set consists of links that needs to be updated time to time

Table 2 : Continuity of literature survey

Control can be brought manually by setting every videos comment section as disable.



Many highly viewed channel who run Television channel content but also post their videos in YouTube Community also disable their comments in the setting section to avoid these activities. Even though this does not take a lot of work , but definitely removes the essence of the platform. Disabling comment section is definitely not an optimal solution, as it restricts other dedicated and faithful users who would love to share their opinion and try to interact with the channel user. Thereby this solution is not that satisfactory to many. People have also observed time stamp on videos that particular pauses or frames the video in a scene where the user unknowingly might have uploaded the content. Defending on these comments, many users tend to accuse the comment more, thereby creating an unfriendly environment which leads to more racial , harsh and mean exchange of words with one another. On the other hand, this also awakens a lot of other users to increase the predatory there by including many loops.

III. METHODOLOGY

The method used in the proposed system comparatively Full text search algorithm for the efficiency. Following are the method in flow of the system. Fig 3 presents diagrammatic representation of flow of the system.

- Data set trained from website <http://onlineslangdictionary.com> [5].
- Setup ElasticSearch with MySQL to connect with trained database.
- Cleaving the comment input from the user using explode command.
- Scrutinizing each cleansed words to the trained data base using Full text search algorithm
- Request to the server for displaying the comment/message using AJAX.

1. Data Set Training

The proposed system search algorithm works from a trained dataset. The dataset is trained from an online dictionary called <http://onlineslangdictionary.com> [5]. This website contains the most often used abusive, predatorily words in social media as voted by public. The data is collected and arranged in a database with index defined for Full text search algorithm. Here we have used MySql database which is an open source relational database that allows for Graphical User Interaction(GUI) interface. The database consists for more than 100 words that are mostly used by predators.

The following are the fields defined :

- *Word_id*
- *Slang_Words*
- *Index*

The *Slang_word* field consists of words that are used for securitizing reference for cleansed words from the comment statement. The *Index* column or field is used for reference in Full text search algorithm. Index is used for sql reference to Match and find words Against the split word

2. ElasticSearch Setup with MySQL

The trained database in MySQL server consists of large data. Using server will not be an efficient solution as it is time taking. Hence the dataset is converted or linked with Elasticsearch. Elasticsearch is an open-source full-content web search tool. It enables you to store and pursuit information progressively. The request time in Elasticsearch

is widely faster than SQL. We can likewise scan for expression, and the motor will give you the outcomes inside seconds relying upon how expansive the Elasticsearch database is.

By running a custom CMC on PHP server have with expansive dataset its hunt time is slower than previously. In this thought, not solely is Elasticsearch the best instrument to extend the site page look time, yet it in like manner empowers the customers to glance through the complete substance inside your site quickly.

3. Cleaving comment and Scrutinizing using Full text search algorithm.

The input taken from the user is executed using HTML and PHP server. The input is taken in the form of comment and cleaved using 'explode' command in the server. The explode command is used for splitting up each word from the input string by user during run time.

The Full-Text Search in SQL Server and Azure SQL Database gives clients and applications a chance to run full-content questions against character-based information in SQL Server tables. Full-content inquiries perform etymological hunts against content information in full-content records by working on words and expressions. It can incorporate basic words and states or numerous types of a word or expression. A full-content question restores any reports that contain somewhere around one match. A match happens when an objective report contains every one of the terms indicated in the full-content question, and meets some other inquiry conditions, for example, the separation between the coordinating terms

Unlike the LIKE command used in scrutinizing normally, the Full text search is comparatively very effective over a huge set of data. Below represents the graph comparison between LIKE and Full-Text Algorithm based on number of records and time taken to query each process

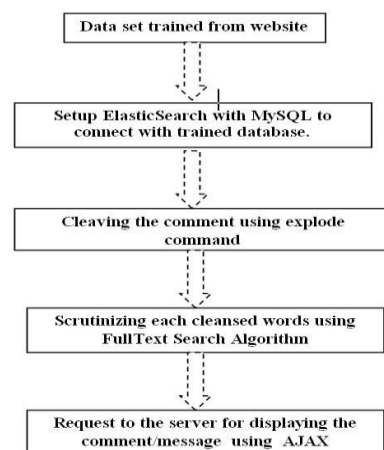


Fig 2 : Proposed system Flow chart.

4. Requesting for server and displaying the comment.

Scrutinizing of cleaved word will inform if any word if predatory or not in reference to the predefined dataset. This information will be sent back to the server for display of comment or message.



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Formatting changes are required from PHP to HTML format. This is carried out by AJAX. AJAX (Asynchronous JavaScript and XML) is another procedure for improving, snappier, and dynamically natural web applications with the help of XML, HTML, CSS, and Java Script. Therefore, the PHP information after scrutinization is transferred into AJAX format using JASON command. This allows in transforming the command into another format without external source. If an command is found with vulgar, unparliamentarily or predatory words, an error message is displayed, thereby not posting the comment on the section and redirecting the user to the type command page. If not found, then the original command is displayed as of how the user has typed without and changes. This method of disability helps the media platform to avoid certain comments that involve abusive language. Therefore the comment section will be in control of such comments and feedback to an extent, thereby still providing an interaction interface between genuine subscribers and the channel user.

IV. RESULT AND DISCUSSION

The achieved result is based on FullText algorithm which is comparatively the most efficient and less time consuming algorithm in terms of scrutinization. The algorithm is preferable when the data set is huge, which in turn is maintained in Elasticsearch application. The result is observed to work on comments of any length within seconds, without any case sensitivity. The reason FullText algorithm is used because the word can be scrutinized easily irrespective of any tense or form is being given as input. Because in FullText algorithm each syllable is checked and matched with the words against the dataset defined. The below images show the result for comments that contain predatorily words.

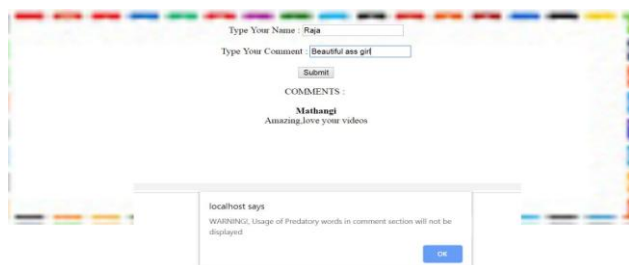


Fig 3 : Output for predatorily comments

The above result is for comments that has abusive words, therefore an error message is displayed without displaying the comment typed. This leads to the user to either type another comment. The below images show us on how the system works for comments that does not contain any abusive languages.



Fig 4 : Output for non-predatorily comments.

Hence, from the above results we can conclude that certain predatory comments that involve predatorily, abusive, unparliamentarily words can be avoided in display using the Full text search algorithm. Proven to work faster in terms of searching and scrutinizing of words, hence the result obtained is also efficient and quick in response. Since the system allows genuine users to still interact with the channel user without any disturbance from the child predators, hence it is both useful to the user and the subscriber. The channel user can no longer be worried about the comment section being abusive for an extent.

V. CONCLUSION

In conclusion, the system works efficient and is useful for both subscriber and user. This feature can be applied by the user as an option like how disable feature is available in settings. By implementing this system into social media platform, it will effectively improve the comment section's nature and will remain active/enabled for users interaction with the creator. Since disabling is not an efficient solution, this developed system will let users to discard the vulgar, predatory comments, on run time itself, thereby restricting the comment from further post and also letting the nature of section. The use of FullText Search algorithm along with Elasticsearch makes the system efficient and durable even for Big Data. As compared to the SQL search technique, Full text algorithm has been proved to be less time consuming in regards with the dataset. Fig 5 suggests the same, as the no. of record increases, the time consumption is more in terms of SQL statement but less in FullText, comparatively.

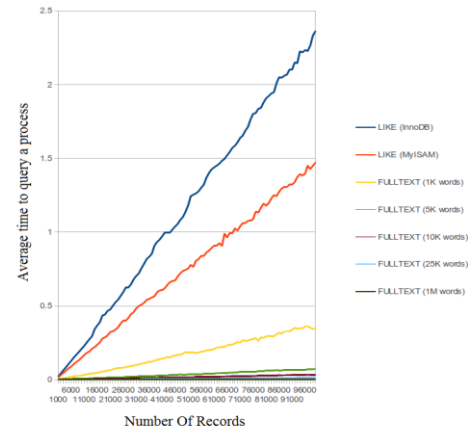


Fig 5 : Graphical representation of FullText and SQL search command.

Further work can be progressed on time stamp comments using face recognition algorithm. An combination of face recognition and FullText search algorithm will improve the comment section to be more friendly in nature.

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