

Team **Cyber Ciphers** is proposing a solution for the problem statement “Sentiment analysis tool to identify community concerns and public sentiment trends”. The major challenge in the problem statement is to **find the correct data and use it**. So we concluded that **social media** is the best place to know about **public opinion** compared to news sites. The solution is made Chandigarh Police for social policing. Our proposed solution is named “**Communisense**” which is an **AI-driven solution to know society better**. The officers can easily input the topic they want to monitor in the search bar. For example, officers want to know the public sentiments about some news, some initiative, or some program launched by them, they just have to **search** for it like “**Chandigarh Police Cyber Awareness Program**” in the search bar. The solution will take the following topic and use YouTube Data API to find the **videos** related to the topic entered. Additionally, we can also add the constraints like **duration** in which we want the comments to be fetched for example if the officer wants to get the comments started from Nov’23 to Dec’23 only and discard older ones. Now, the program at the backend will read the comments from these videos, and pass the comments through **3 models**. The first model classifies the comment in the **conventional sentiment category** as Positive, Negative, and Neutral. The second model will classify the comment into one of the **8 emotions based on the Plutchik Wheel** of emotions having emotions like anger, sadness, joy, fear, etc. The model will help police personnel know about the **public emotions** related to the particular topic so that they can action on the situation accordingly. Last but not least third model suggested by **Master Hacks** is the extended emotions model which further combines the basic 8 emotions to know the **psychology** of the comment poster. The output of the third model will result in **28 psychological** emotions namely admiration, curiosity, love, etc. This data from the **back end** will be streamed to the front end in **real-time** by setting up a **stream** from the back end to the front end. The comments fetched are **passed in batches to the above 3 models** and results are shown on the dashboard with the help of various plots and tables. The topmost cards will display the video count, comments, and video’s total views which will help to know the quantity of data being analyzed. The first pictorial representation we are using is a **Line Time Series plot** which plot which will plot all 8 emotions against time in terms of months or weeks. At any point in time, we can easily **compare the strength** of all **8 emotions** against each other and will show us changes in emotions with an increase in time. The second plot is the **Pie Chart**, which will plot the sentiments such as positive, negative, and neutral to illustrate the **numerical proportions of each sentiment**. The next plot used is the emotions **bar chart plot** which will show the **number of comments** found for **each emotion**. This plot will give officers an idea about **how strong a particular emotion is in society**. We have also added two tables to showcase the comments in two different aspects namely comment emotions and comment psychology respectively. The comment emotions table will showcase the comments along with the likes count, replies count, and type of emotion with it’s score. The table attributes like comment likes counts and reply counts are added to **show how much people other than the commenter support the opinion**. The police officials can **easily filter** out the required attributes from the table using the filter feature. For example, if they want to filter the comments with **emotions of anger** they can filter the comments with anger emotion and see in about which **topic people are not happy** that should be taken care of. The second table of comments psychology will help police officers to know about the **psychology** of commenters. There may be the case that the comment is classified as anger but it may not be correct. **For example** the comment, “Anything on the problem statements ? Can’t find any details on website ...”, is classified as anger but the comment is **not aggressive** it is more of a question but the way the user wrote it seems aggressive so the third model will tell us about the psychology of comment as “**Curious**”. Further additions to the solution can involve the inclusion of **more data sources** to be analyzed, an easy-to-use **mobile** application for police officials, and more **customization** to target the data more specifically.