**Social Media Analytics**

Social media is already having a profound influence on both society and business. The societal impact has been both psychological and behavioural. Various events, crises, and issues in the world have received a boost because of the use of social media by millions of people

**Data Mining** is the Main point for any social media analysis project

There are **two** main ways to collect data for an analysis:

1. By connecting to APIs or by crawling

2. Scraping the social networks.

Scope and process

The process of information extraction is organized in a data flow. It starts with data extraction from an API, data pre-processing and wrangling, and is followed by a series of different analyses.

Analysing the feed of posts and comments on the official Facebook page of a Brand

Extract all the posts of A brand permitted by the Facebook API

Extract the metadata for each post: Timestamp, number of likes, number of shares, and number of comments

Extract the user comments under each post and the metadata

Process the posts to retrieve the most common keywords, bi-grams, and hashtags

Process the user comments using the Alchemy API to retrieve the emotions

Analyse the all results obtained from the preceding steps to derive Conclusions

**Steps**

**Pull Data**

**Store Data**

**Data Mining**

**Reporting**

**Processing**

**Visualisation**

**Text Analysis**

**Facebook Data Extraction**

Facebook provides three **APIs** for different purposes:

**Atlas API**: API for partners and advertisers

**Graph API**: The primary way for apps to read and write to the Facebook social graph

**Marketing API**: To build solutions for marketing automation with Facebook's advertising platform

In our data mining Task we will only focus on **Graph API**, which gives us access to our point of interest, which is the content posted by users: comments, shares, likes, photos, and so on.

It is the primary way to collect data from Facebook platform using requests to query data. It also enables the automation of all the actions available on Facebook such as data uploads (photos or videos), likes, shares, and account management, among others.

The name **Graph API** is related to the structure of the platform & represents a social graph composed of:

Nodes: All the main elements such as user, photo, page, and comment

Edges: Relationships between nodes such as user photos and comments in posts

Fields: Attributes that these nodes or edges can have such as location, name, birthday date, time, and so on

Creating an app and getting an access token

Procedure Token to get access tokens that never expire.

Go to the website: <https://developers.facebook.com/apps/>.

Create an application.

Go to <https://developers.facebook.com/tools/explorer>.

Select our application from the Graph API Explorer drop-down menu.

Click on the Get Access Token button.

Select permissions from the form.

In the Access token input field click on the blue exclamation point icon. It will open a pop-up window.

In the pop-up window, click on Open in Access Token Tool. We will see token details. At this stage the token is valid for around one hour.

Click on the Extend Access Token button to get a token that will never expire.

We can save the token and use it in our application to collect data from Facebook.

We will only have access to public information on Facebook. Our application has to have the right to access the data we wish to collect. In our case it is straightforward, because we will analyse public conversation around brands.

**Advantages of social media APIs**

Social media APIs have many advantages. The main advantages are:

Social data: APIs allow us to extract valuable data around Social Media users and content that is used for behavioural analysis and user insights.

App development: Thousands of software and applications have been built using Social Media APIs that provide additional services on top of Social Media platforms.

Marketing: Social media APIs are useful in automating marketing activities such as social media marketing by posting on platforms. It also helps in enriching marketing data through Social Data acquired about customers.

**Limitations of social media APIs**

However, there are some limitations too, which are:

Rate limits: Social media companies need to take into account the amount of data that enters or leaves their systems. These are rules based on their infrastructural limitations and business objectives. We must not think of acquiring unlimited amounts of data at our own speeds. The amount of data and the speed of receiving are clearly stated by most social media platforms. We have to read them carefully and include them in our extraction strategy.

API changes: This is one of the biggest challenges to deal with when developing applications or analysis using social data. Social media platforms are free to change or stop their API services own will. Such kinds of change or stoppage could severely impact development or analytics strategies. The only advice in such situations is to be prepared for it and have flexible systems to be able to adapt to the changes.

Legal: This challenge is mainly in the use cases around social media APIs. The rules and regulations for social media platforms are strict about the type of usage of its data and services. We have to be conscious of the legal framework before thinking of our usage and applications. Any use of data from APIs that doesn't conform to the stipulated regulations risks legal implications.

**Requirement**

**Working environment**

The environment which facilitate data manipulation and algorithm implementation

**Python**, which are widely used by data scientists all over the world

Python is one of the most common programming languages among data scientists, along with R. The main advantage of Python is its flexibility and simplicity. It makes the data analysis and manipulation easy by offering a lot of packages. It shows great performance in analysing unstructured textual data and has a very good ecosystem of tools and packages for this purpose

**MongoDB** for Storage

**Facebook Developer Account**

1. Business Manager Account Verified

2. An app for which you have a role, such as an [admin, developer, or tester role](https://developers.facebook.com/docs/apps#roles).

**Graph API**

APIs allow users to send a request for a particular resource, such as Facebook or Twitter, and receive some data in response. It is worth noting that all API providers fix some limitations on the quantity or type of data which users can obtain. APIs give access data processing resources, such as AlchemyAPI that receives in a request verbatim (textual data) and sends in response all results of the analysis, such as nouns, verbs, entities, and so on. In our case, the APIs are used either to get data from social networks or to execute some complex processing on them.

Social media in the last decade has taken the world by storm. Billions of interactions take place around the world among the different users of Facebook, Twitter, YouTube, online forums, Pinterest, GitHub, and others. All these interactions, either captured through the data provided by the APIs of these platforms or through custom crawlers, have become a hotbed of information and insights for organizations and scientists around the world

[How do I get data using the Graph API?](https://developers.facebook.com/docs/graph-api/faq#faq_968220149992607)

You will need an access token, which is obtained via Facebook Login, in order to make Graph API calls from your app. Graph API requests go through a host URL, most usually graph.facebook.com, and the object ID of the node you are trying to access.

You can read any node or edge by performing a GET operation on the relevant endpoint. You can choose the fields or edges that you want returned with the fields query parameter. You can also order certain data sets chronologically.

For more information, see the [Graph API Overview](https://developers.facebook.com/docs/graph-api/overview), which documents the basics of Graph API terminology and structure, and the [Using the Graph API documentation](https://developers.facebook.com/docs/graph-api/using-graph-api), which contains more details about the various operations you can perform with the Graph API.

[Can I post a comment using the Graph API Explorer?](https://developers.facebook.com/docs/graph-api/faq#faq_385712255195577)

Yes, posting a comment using the Graph API Explorer is possible. See [Example 2: Post a Comment](https://developers.facebook.com/docs/graph-api/explorer#comment) in the [Graph Explorer Guide](https://developers.facebook.com/docs/graph-api/explorer) for step-by-step instructions.

**API Limitation**

Each app is given an allotment of 200 API calls per user in any given 60 minute window.

From the Facebook documentation as of October 7th 2015, here's how rate limiting on the Graph API works:

Rate limiting is done on your Facebook AppId. If your app reaches a rate limit, all calls made for that app will be limited not just on a per-user basis.

Rate limiting is calculated by taking the number of users your app had the previous day and adding today's new logins. This gives a base number of users that your app has.

As an example, if your app had 10 users yesterday and 5 new logins today, that would give you a base of 15 users. This means that your app can make ((10 + 5) \* 200) = 3000 API calls in any 60 minute window.

Know More <https://developers.facebook.com/docs/graph-api/overview/rate-limiting>

Source - <https://developers.facebook.com/docs/graph-api> , Internet etc