Fake Profile Detection

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Collecting data from Twitter

```
1 import pandas as pd
2 import tweepy
3 import time
4 import numpy as np
5 from tweepy import Stream
6 from tweepy.streaming import StreamListener
7 import numpy as np
8 from sklearn.model_selection import train_test_split
9 from sklearn.utils.multiclass import unique_labels
```

```
[ ]  1 consumer_key  = 'd9Ksoz6Wb1jD0mqbW8rjaSNb7'
     2 consumer_secret = 'pHXnVSJeLbOxaYlbOR7BWFdDNhZSF6IzegZV87qUSUqy6Qe8qG'
     3 access_token = '3648603434-dGRu1nHet22tdoYeqaAGoN8MyZrNw9oXZQvGZUD'
     4 access_token_secret = 'PZ8pcQBCb5zVPLRQNVQZc3Yzi0rz1wPef6O7RO7gzcvOf'
     5 auth = tweepy.OAuthHandler(consumer_key, consumer_secret)
     6 auth.set_access_token(access_token, access_token_secret)
     7 api = tweepy.API(auth, wait_on_rate_limit=True)
```

```
[ ]  1 api
```

```
<tweepy.api.API at 0x7f7994afd710>
```

- Collecting data from twitter using tweepy model.
- For that we need Consumer key, Consumer secret key, Access token, Access token.
- We can get those data from twitter app.devloper where we have to sign in and make an account and then twitter generate the keys.
- We will import all other packages required

Printing all the friends names of the user

```
# printing all the friends names of the user
print('Name of the Friends of user')
friends = []
for friend in tweepy.Cursor(api.friends, screen_name = 'Rajinikanth').items(30):
    try:
                friends.append(friend.screen_name)
                print(friend.screen_name)
                time.sleep()
    except Exception as e:
                pass
with open("Fri_1.txt", "w") as f:
     for item in friends:
        f.write("%s\n" % item)
```

We try printing the friend names of the particular user. Here, in this case we have considered example of Rajinikanth and have stored the list of names in a file “Fri_1”

Output:

```
Name of the Friends of user
anirudhofficial
arrahman
dhanushkraja
soundaryaarajni
ash_r_dhanush
SrBachchan
PMOIndia
narendramodi
firstpost
bsindia
airnewsalerts
EconomicTimes
ABPNews
BBCHindi
aajtak
ZeeNewsEnglish
TimesNow
htTweets
IndiaToday
IndianExpress
ndtv
the_hindu
timesofindia
CNNnews18
```

```
Data.head()
```

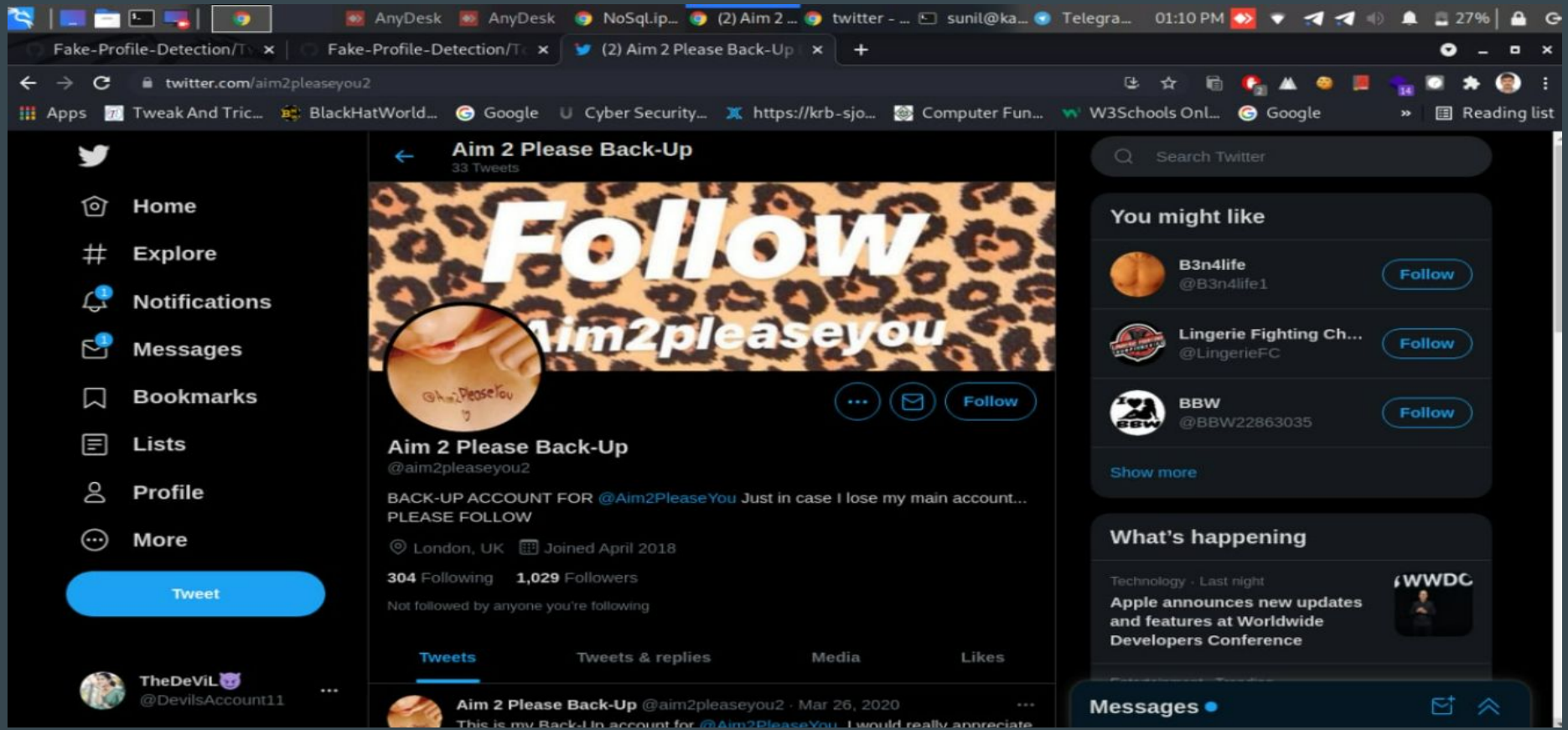
	TwittID	TextData	TweetCreatedAt	RetweetCount	TweetFavouriteCount	TweetSource	UserID	UserScreenName	UserName	UserCreatedAt	UserDescription	UserDescriptionLength	UserFollowersCount	UserFriendsCount	UserLocation	HttpCount	HashtagCount	Menti
0	1399625976800153600	RT @karthiksubbaraj: Here's #JagameThandhiramT...	2021-06-01 07:16:51	3227	0	Twitter for iPhone	216447259	anirudhofficial	Anirudh Ravichander	2010-11-16 19:13:06	Music Composer/Singer in the Indian Film Industry	49	8138319	207	Chennai	1	2	
1	1399625927089217536	RT @dhanushkraja: What would have been a great...	2021-06-01 07:16:39	7527	0	Twitter for iPhone	216447259	anirudhofficial	Anirudh Ravichander	2010-11-16 19:13:06	Music Composer/Singer in the Indian Film Industry	49	8138319	207	Chennai	0	0	
2	1395367947552522241	This track and it's video are 🔥 \nAwesome work...	2021-05-20 13:16:58	302	3645	Twitter for iPhone	216447259	anirudhofficial	Anirudh Ravichander	2010-11-16 19:13:06	Music Composer/Singer in the Indian Film Industry	49	8138319	207	Chennai	1	1	
3	1395030557092769794	#URGENT 🆘\nEmergency need of 72 vials of #Amph...	2021-05-19 14:56:17	925	2715	Twitter for iPhone	216447259	anirudhofficial	Anirudh Ravichander	2010-11-16 19:13:06	Music Composer/Singer in the Indian Film Industry	49	8138319	207	Chennai	1	2	
4	1392771872056479748	RT @soundaryaarajni: Our Thalaivar gets his va...	2021-05-13 09:21:05	4565	0	Twitter for iPhone	216447259	anirudhofficial	Anirudh Ravichander	2010-11-16 19:13:06	Music Composer/Singer in the Indian Film Industry	49	8138319	207	Chennai	0	2	

TwittID TextData
TweetCreatedAt
RetweetCount
TweetFavouriteCount
TweetSource
UserID
UserScreenName
UserName
UserCreatedAt

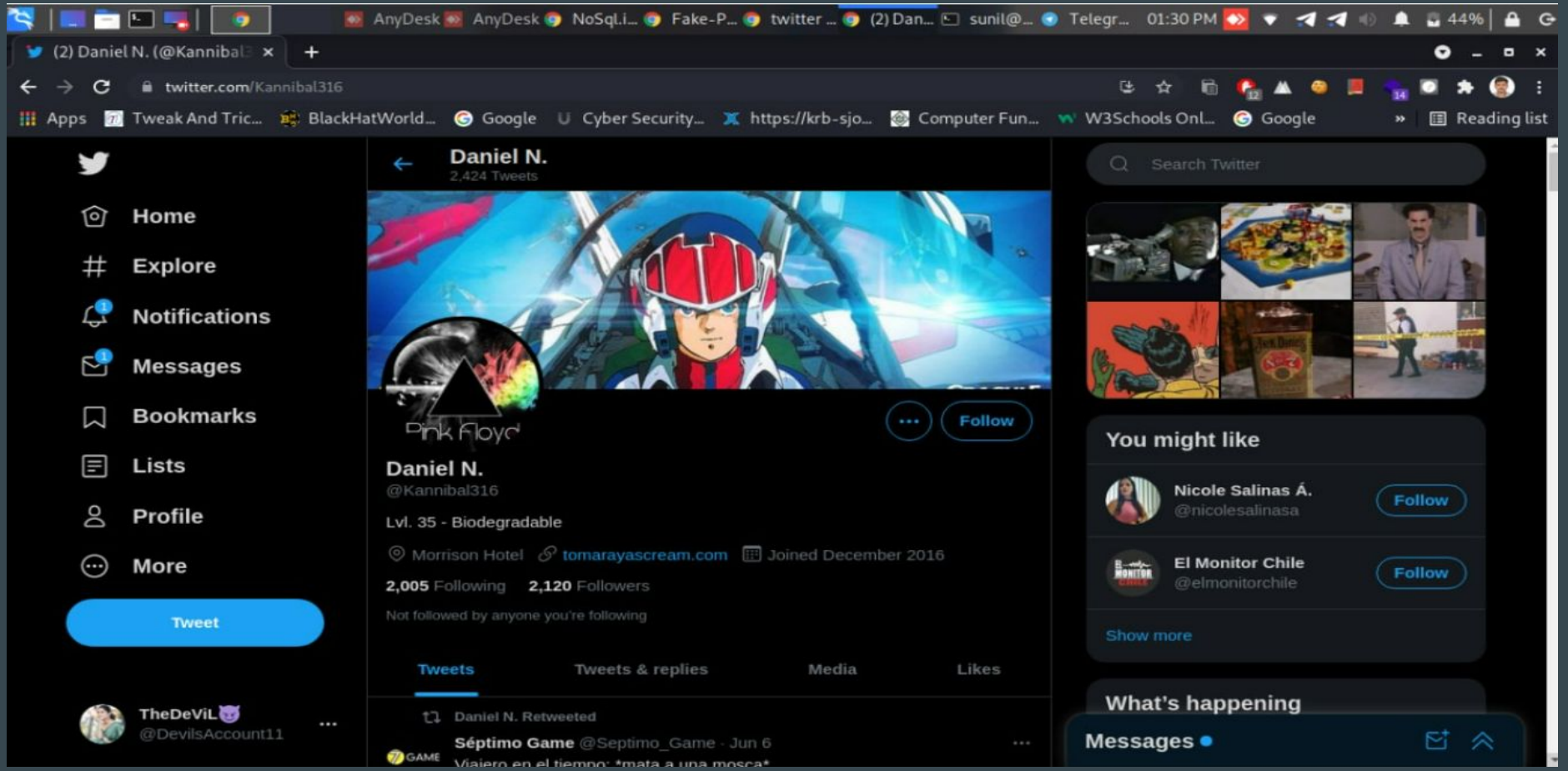
UserDescription
UserDescriptionLength
UserFollowersCount
UserFriendsCount
UserLocation
HttpCount
HashtagCount
MentionCount
TweetCount

Top 5 tweets

Spam profiles detection



Spam profile-2



Genuine Users:

	TwittID	TextData	TweetCreatedAt	RetweetCount	TweetFavouriteCount	TweetSource	UserID	UserScreenName	UserName	UserCreatedAt	UserDescription	UserDescriptionLength	UserFollowersCount	UserFriendsCount	UserLocation	HttpCount	HashtagCount	Me
0	1399625976800153600	RT @karthiksubbaraj: Here's #JagameThandhiramT...	2021-06-01 07:16:51	3227	0	Twitter for iPhone	216447259	anirudhofficial	Anirudh Ravichander	2010-11-16 19:13:06	Music Composer/Singer in the Indian Film Industry	49	8138319	207	Chennai	1	2	
1	1399625927089217536	RT @dhanushkraja: What would have been a great...	2021-06-01 07:16:39	7527	0	Twitter for iPhone	216447259	anirudhofficial	Anirudh Ravichander	2010-11-16 19:13:06	Music Composer/Singer in the Indian Film Industry	49	8138319	207	Chennai	0	0	
2	1395367947552522241	This track and it's video are 🔥 \nAwesome work...	2021-05-20 13:16:58	302	3645	Twitter for iPhone	216447259	anirudhofficial	Anirudh Ravichander	2010-11-16 19:13:06	Music Composer/Singer in the Indian Film Industry	49	8138319	207	Chennai	1	1	
3	1395030557092769794	#URGENT 🆘\nEmergency need of 72 vials of #Amph...	2021-05-19 14:56:17	925	2715	Twitter for iPhone	216447259	anirudhofficial	Anirudh Ravichander	2010-11-16 19:13:06	Music Composer/Singer in the Indian Film Industry	49	8138319	207	Chennai	1	2	
4	1392771872056479748	RT @soundaryaarajni: Our Thalaivar gets his va...	2021-05-13 09:21:05	4565	0	Twitter for iPhone	216447259	anirudhofficial	Anirudh Ravichander	2010-11-16 19:13:06	Music Composer/Singer in the Indian Film Industry	49	8138319	207	Chennai	0	2	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
715	1402144157053853703	RT @news18dotcom: @AmanKayamHai_ In the detail...	2021-06-08 06:03:12	2	0	TweetDeck	6509832	CNNnews18	News18	2007-06-01 20:31:01	Lightning fast alerts, #BreakingNews from Indi...	62	4597047	403	India	0	0	
716	1402143957325258753	RT @news18dotcom: @AmanKayamHai_ News18's @Ama...	2021-06-08 06:02:24	3	0	TweetDeck	6509832	CNNnews18	News18	2007-06-01 20:31:01	Lightning fast alerts, #BreakingNews from Indi...	62	4597047	403	India	0	0	
717	1402142378102640643	It is learnt that the Centre had planned to am...	2021-06-08 05:56:08	3	11	Twitter Web App	6509832	CNNnews18	News18	2007-06-01 20:31:01	Lightning fast alerts, #BreakingNews from Indi...	62	4597047	403	India	1	0	
718	1402140713614299136	It was propagated as Modi vaccine: @RajeevRai,...	2021-06-08 05:49:31	1	7	Grabyo	6509832	CNNnews18	News18	2007-06-01 20:31:01	Lightning fast alerts, #BreakingNews from Indi...	62	4597047	403	India	1	0	
719	1402140137312587777	RT @news18dotcom: An immunocompromised individ...	2021-06-08 05:47:13	1	0	TweetDeck	6509832	CNNnews18	News18	2007-06-01 20:31:01	Lightning fast alerts, #BreakingNews from Indi...	62	4597047	403	India	1	0	

720 rows × 19 columns

Count of spam users and genuine users:

Total count : 930

```
1 df.shape
```

```
(930, 25)
```

Genuine : 720

```
1 Total_leg_data.shape
```

```
(720, 24)
```

Fake: 210

```
1 Total_spam_data.shape
```

```
(210, 25)
```

Attributes that we have in our dataset now are:

```
[ ]  1 df.columns
```

```
Index(['TwittID', 'TextData', 'TweetCreatedAt', 'RetweetCount',
       'TweetFavouriteCount', 'TweetSource', 'UserID', 'UserScreenName',
       'UserName', 'UserCreatedAt', 'UserDescription', 'UserDescriptionLength',
       'UserFollowersCount', 'UserFriendsCount', 'UserLocation', 'HttpCount',
       'HashtagCount', 'MentionCount', 'TweetCount', 'AvgHashtag',
       'AvgURLCount', 'AvgMention', 'AvgRetweet', 'AvgFavCount',
       'SpammerOrNot'],
      dtype='object')
```

Attributes that are been considered for training model

```
[ ] 1 Lis = ['RetweetCount','TweetFavouriteCount','UserDescriptionLength','UserFollowersCount', 'UserFriendsCount','HttpCount','HashtagCount', 'MentionCount', 'TweetCount', 'AvgHashtag','AvgURLCount', 'AvgMention', 'AvgRetweet', 'AvgFavCount']

[ ] 1 X = df[Lis]

[ ] 1 X
```

	RetweetCount	TweetFavouriteCount	UserDescriptionLength	UserFollowersCount	UserFriendsCount	HttpCount	HashtagCount	MentionCount	TweetCount	AvgHashtag	AvgURLCount	AvgMention	AvgRetweet	AvgFavCount
0	3227.0	0	49	8138319	207	1	2	4	12891	1.133333	0.433333	1.566667	2806.4	6632.266667
1	7527.0	0	49	8138319	207	0	0	1	12891	1.133333	0.433333	1.566667	2806.4	6632.266667
2	302.0	3645	49	8138319	207	1	1	3	12891	1.133333	0.433333	1.566667	2806.4	6632.266667
3	925.0	2715	49	8138319	207	1	2	0	12891	1.133333	0.433333	1.566667	2806.4	6632.266667
4	4565.0	0	49	8138319	207	0	2	1	12891	1.133333	0.433333	1.566667	2806.4	6632.266667
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
925	0.0	0	98	275	922	1	0	3	8481	0.166667	0.600000	1.133333	65.9	0.400000
926	0.0	5	98	275	922	1	0	1	8481	0.166667	0.600000	1.133333	65.9	0.400000
927	25.0	0	98	275	922	1	0	1	8481	0.166667	0.600000	1.133333	65.9	0.400000
928	0.0	3	98	275	922	0	0	3	8481	0.166667	0.600000	1.133333	65.9	0.400000
929	17.0	0	98	275	922	1	0	1	8481	0.166667	0.600000	1.133333	65.9	0.400000

930 rows × 14 columns

ML model :

Logistic Regression

```
1 X_train,X_test,y_train,y_test = train_test_split(X, y, test_size=0.20, random_state=24)
```

```
1 from sklearn.linear_model import LogisticRegression
2
```

```
1 model=LogisticRegression(max_iter=1000)
```

```
1 model.fit(X_train, y_train)
```

```
LogisticRegression(C=1.0, class_weight=None, dual=False, fit_intercept=True,
                   intercept_scaling=1, l1_ratio=None, max_iter=1000,
                   multi_class='auto', n_jobs=None, penalty='l2',
                   random_state=None, solver='lbfgs', tol=0.0001, verbose=0,
                   warm_start=False)
```

```
1 prediction=model.predict(X_test)
```

```
1 model
```

```
LogisticRegression(C=1.0, class_weight=None, dual=False, fit_intercept=True,
                   intercept_scaling=1, l1_ratio=None, max_iter=1000,
                   multi_class='auto', n_jobs=None, penalty='l2',
                   random_state=None, solver='lbfgs', tol=0.0001, verbose=0,
                   warm_start=False)
```

Accuracy:

We have used logistic regression for prediction and got accuracy of 95.33

```
[166] prediction

      array([0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 1, 0, 0, 0, 0, 0,
             0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 1, 1, 0, 1, 0, 0, 0, 0, 1, 1,
             0, 0, 0, 1, 0, 0, 0, 0, 0, 1, 0, 1, 0, 0, 0, 0, 0, 1, 0, 1, 0, 0,
             0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 1, 1, 0, 0, 1,
             0, 0, 0, 1, 0, 1, 1, 1, 0, 0, 1, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0,
             0, 0, 1, 0, 0, 1, 0, 1, 0, 1, 1, 0, 0, 0, 1, 0, 0, 0, 1, 0, 0, 0,
             0, 0, 1, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 1,
             1, 0, 0, 0, 0, 0, 1, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1,
             1, 1, 1, 0, 0, 0, 0, 0, 0, 0])

[170] Acc = accuracy_score(y_test, prediction)

[173] print("LR Model Acc : ",Acc*100)

      LR Model Acc :  95.33
```

Thank you