

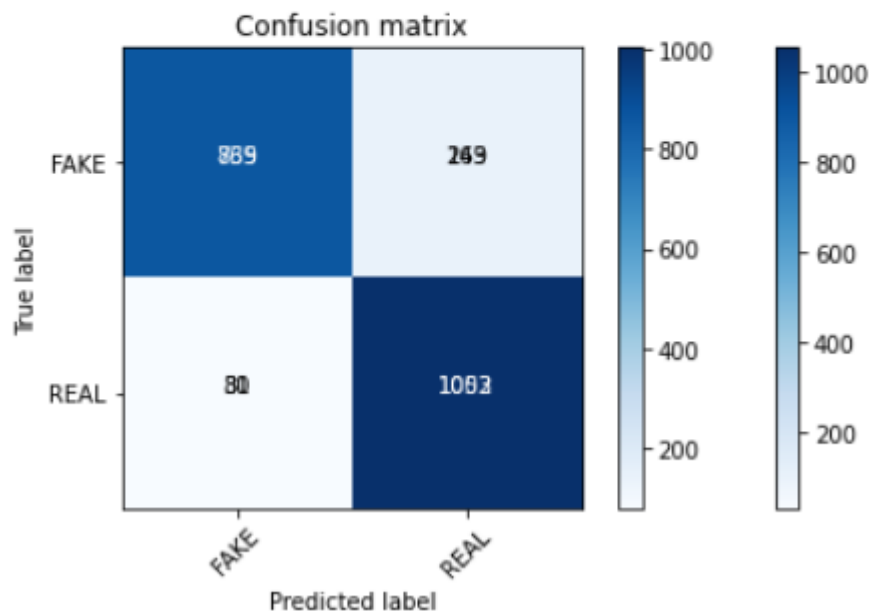
```
False
00 000 0000 000000031 0000035 000006 ... هذا والمرضى من محاولات ما fake
0 0 0 0 0 0 0 ... 0 0 0 0 0 0
1 0 0 0 0 0 0 ... 0 0 0 0 0 0
2 0 0 0 0 0 0 ... 0 0 0 0 0 0
3 0 0 0 0 0 0 ... 0 0 0 0 0 0
4 0 0 0 0 0 0 ... 0 0 0 0 0 0
```

```
[5 rows x 56922 columns]
00 000 0000 000000031 0000035 ... هذا والمرضى من محاولات fake
0 0.0 0.0 0.0 0.0 0.0 ... 0.0 0.0 0.0 0.0 0.0
1 0.0 0.0 0.0 0.0 0.0 ... 0.0 0.0 0.0 0.0 0.0
2 0.0 0.0 0.0 0.0 0.0 ... 0.0 0.0 0.0 0.0 0.0
3 0.0 0.0 0.0 0.0 0.0 ... 0.0 0.0 0.0 0.0 0.0
4 0.0 0.0 0.0 0.0 0.0 ... 0.0 0.0 0.0 0.0 0.0
```

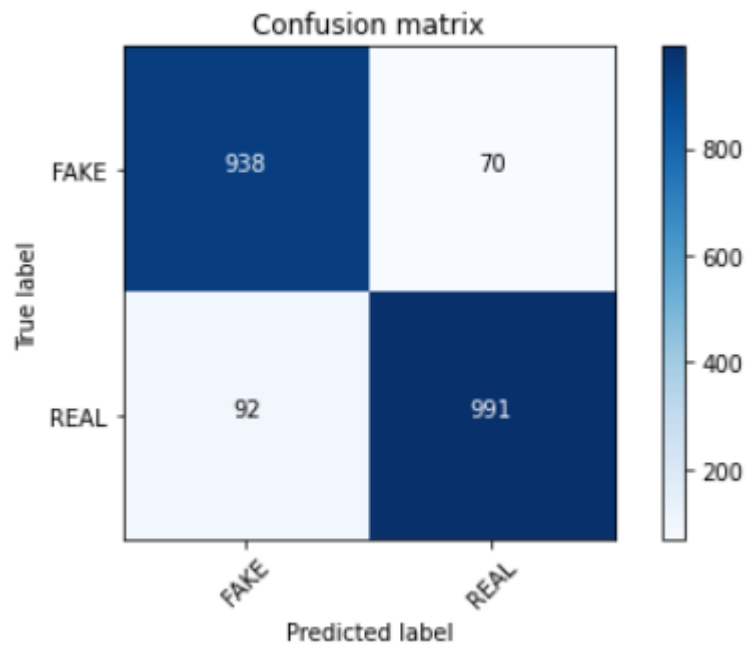
```
[5 rows x 56922 columns]
```

Naive Bayes classifier for Multinomial model

```
accuracy: 0.857
Confusion matrix, without normalization
[[ 739 269]
 [ 31 1052]]
accuracy: 0.893
Confusion matrix, without normalization
[[ 865 143]
 [ 80 1003]]
```



Applying Passive Aggressive Classifier



Result:-

```
accuracy: 0.857
Confusion matrix, without normalization
[[ 739 269]
 [  31 1052]]
accuracy: 0.893
Confusion matrix, without normalization
[[ 865 143]
 [  80 1003]]
accuracy: 0.933
Confusion matrix, without normalization
[[953  55]
 [ 85 998]]
Alpha: 0.00 Score: 0.88140
```

Alpha: 0.10 Score: 0.89766
Alpha: 0.20 Score: 0.89383
Alpha: 0.30 Score: 0.89000
Alpha: 0.40 Score: 0.88570
Alpha: 0.50 Score: 0.88427
Alpha: 0.60 Score: 0.87470
Alpha: 0.70 Score: 0.87040
Alpha: 0.80 Score: 0.86609
Alpha: 0.90 Score: 0.85892
FAKE -4.931714299103652 2016
FAKE -4.180170028121769 october
FAKE -4.140646575487348 hillary
FAKE -3.041367927384972 share
FAKE -2.761558774029312 article
FAKE -2.661654568679527 november
FAKE -2.5614675766193185 print
FAKE -2.3909381391672313 email
FAKE -2.312016811358037 oct
FAKE -2.2356113093395997 war

FAKE -2.214372885668249 advertisement
FAKE -2.208688690097971 mosul
FAKE -2.1990898095028175 election
FAKE -2.0387249171990773 source
FAKE -1.9588412076434412 establishment
FAKE -1.865213301375654 nov
FAKE -1.8404172826397225 corporate
FAKE -1.833898202626644 podesta
FAKE -1.7880839156088633 wikileaks
FAKE -1.7621791778503966 brexit
FAKE -1.7610084168536009 com
FAKE -1.7267025946352363 watch
FAKE -1.7147134345496016 snip
FAKE -1.6780027397174917 donald
FAKE -1.675411805780987 ayotte
FAKE -1.6734534243416537 soros
FAKE -1.6603309815715956 uk
FAKE -1.6564617910344352 dr
FAKE -1.6513318867934592 26

FAKE -1.602043321345749 pipeline

REAL 4.828309884451932 said
REAL 2.7582834724115646 says
REAL 2.549500392470769 marriage
REAL 2.530006077194114 cruz
REAL 2.468380157662895 tuesday
REAL 2.458856399492238 gop
REAL 2.2225244641012187 islamic
REAL 2.1958127046738083 candidates
REAL 2.1861854421732536 monday
REAL 2.169869479725628 conservative
REAL 2.1008517026315308 friday
REAL 2.08156686901191 debate
REAL 2.0765332090418345 continue
REAL 2.065347878289896 deal
REAL 2.041246658970233 jobs
REAL 2.014338056491839 sen
REAL 1.9650430375107535 presumptive

```
REAL 1.9550302557291697 attacks
REAL 1.9356704128514837 rush
REAL 1.8865366364239509 sunday
REAL 1.8734811854807485 convention
REAL 1.8297058161774018 group
REAL 1.7864216121778256 say
REAL 1.777044434333905 march
REAL 1.773444284609455 conservatives
REAL 1.7299993564032956 attack
REAL 1.7214354345585527 recounts
REAL 1.694101757726055 campaign
REAL 1.6641270383167086 baltimore
REAL 1.661490917407099 week
accuracy: 0.902
Confusion matrix, without normalization
[[ 883 125]
 [ 80 1003]]
accuracy: 0.921
- . . . .
Confusion matrix, without normalization
[[937 71]
 [ 94 989]]
```