Mobile Health Text Misinformation Detection Using Effective Information Retrieval Methods

```
warning('off','MATLAB:ClassInstanceExists')
clear classes
mod = py.importlib.import_module('LCSProjectPython');
py.importlib.reload(mod);

modLACS = py.importlib.import_module('LACSProjectPython');
py.importlib.reload(modLACS);

modPhrase = py.importlib.import_module('PhraseProjectPython');
py.importlib.reload(modPhrase);

modKeywordMatching = py.importlib.import_module('KeywordMatchingProjectPython');
py.importlib.reload(modKeywordMatching);
```

Keywork Matching

Similarity = # of common Elements

```
py.KeywordMatchingProjectPython.getResult()
T = readtable('KeywordMatchingResult.csv');
```

```
Warning: Column headers from the file were modified to make them valid MATLAB identifiers before creating
variable names for the table. The original column headers are saved in the VariableDescriptions property.
Set 'VariableNamingRule' to 'preserve' to use the original column headers as table variable names.
```

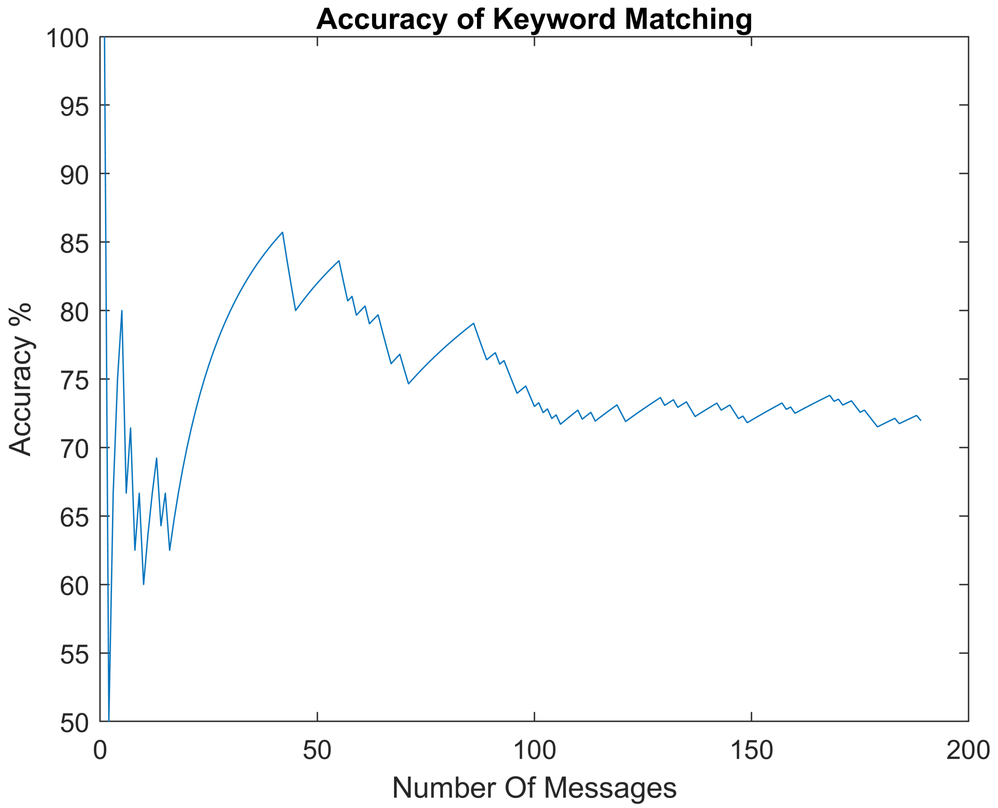
```
T
```

T = 6×4 table

	Class	Total	KeywordMatchingCorrectPrediction	KeywordMatchingAccuracy
1	'Disinformative'	34	26	76
2	'Real'	24	11	46
3	'Fake'	52	49	94
4	'MisInformative'	35	24	69
5	'Unverified'	44	26	59
6	'Total'	189	136	72

```
T = readtable('PlotKeywordMatching.csv');
X=T{:,1};
Y=T{:,2};
savefig('KeywordMatchingdata.fig');
close(gcf);
%openfig('LCSdata.fig')
plot(X,Y)
title('Accuracy of Keyword Matching')
```

```
xlabel('Number Of Messages')
ylabel('Accuracy %')
```



Longest Common Subsequence (LCS)

Similarity = # of connections

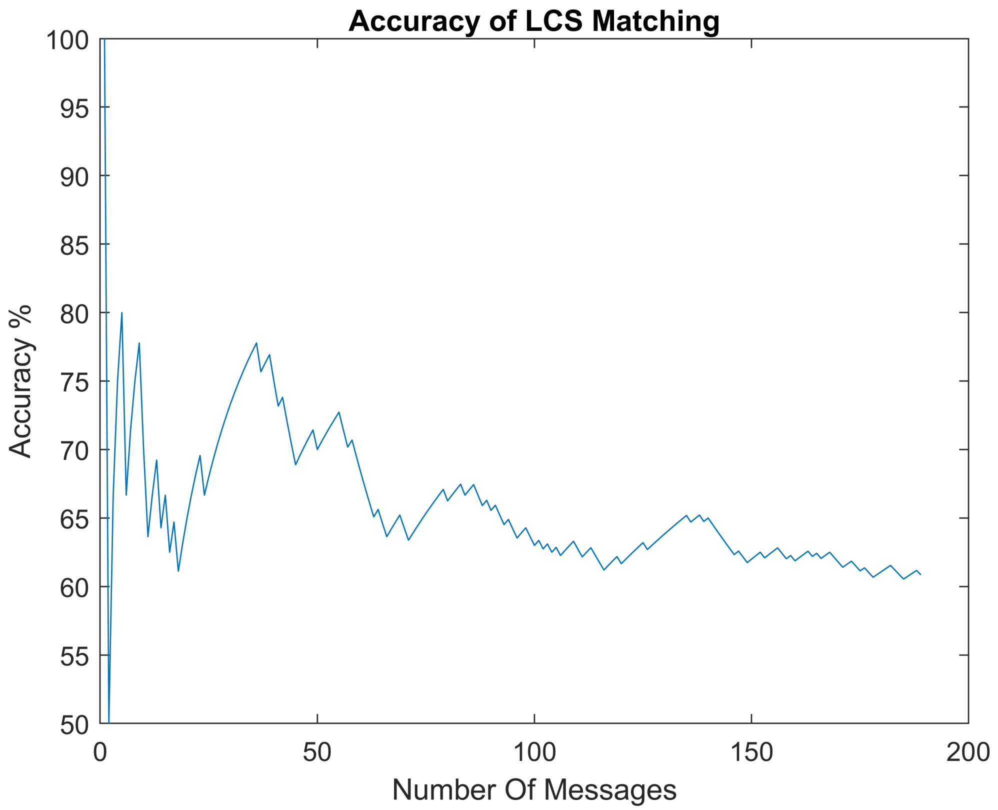
```
py.LCSProjectPython.getResult()
T = readtable('LCSResult.csv');
T
```

T = 6×4 table

	Class	Total	LCSCorrectPrediction	LCSAccuracy
1	'Disinformative'	34	18	53
2	'Real'	24	9	38
3	'Fake'	52	43	83
4	'MisInformative'	35	17	49
5	'Unverified'	44	28	64
6	'Total'	189	115	61

```
T = readtable('PlotLCS.csv');
X=T{:,1};
```

```
Y=T{:,2};
savefig('LCSdata.fig');
close(gcf);
%openfig('LCSdata.fig')
plot(X,Y)
title('Accuracy of LCS Matching')
xlabel('Number Of Messages')
ylabel('Accuracy %')
```



Longest Approximate Common Subsequence (LACS)

Similarity = Weight*(# of connections) – (# of crossings)∕(# of connections)

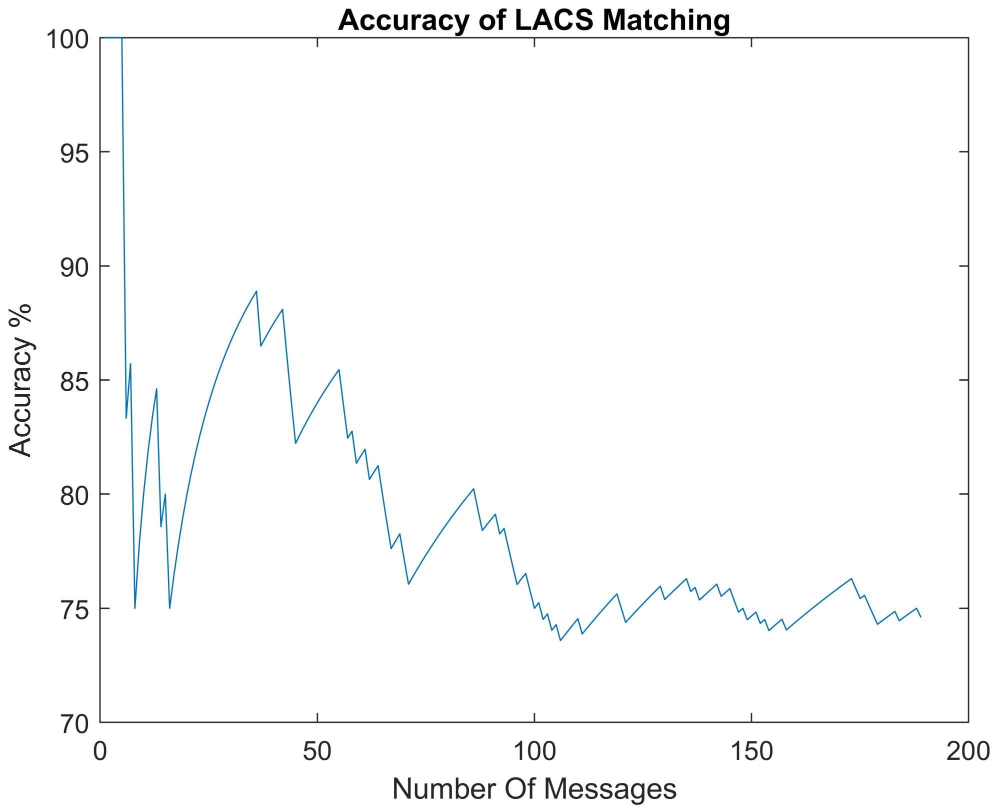
```
py.LACSProjectPython.getResult()
T = readtable('LACSResult.csv');
T
```

T = 6×4 table

	Class	Total	LACSCorrectPrediction	LACSAccuracy
1	'Disinformative'	34	27	79
2	'Real'	24	10	42
3	'Fake'	52	50	96
4	'MisInformative'	35	23	66
5	'Unverified'	44	31	70

	Class	Total	LACSCorrectPrediction	LACSAccuracy
6	'Total'	189	141	75

```
T = readtable('PlotLACS.csv');
X=T{:,1};
Y=T{:,2};
savefig('LACSdata.fig');
close(gcf);
%openfig('LACSdata.fig')
plot(X,Y)
title('Accuracy of LACS Matching')
xlabel('Number Of Messages')
ylabel('Accuracy %')
```

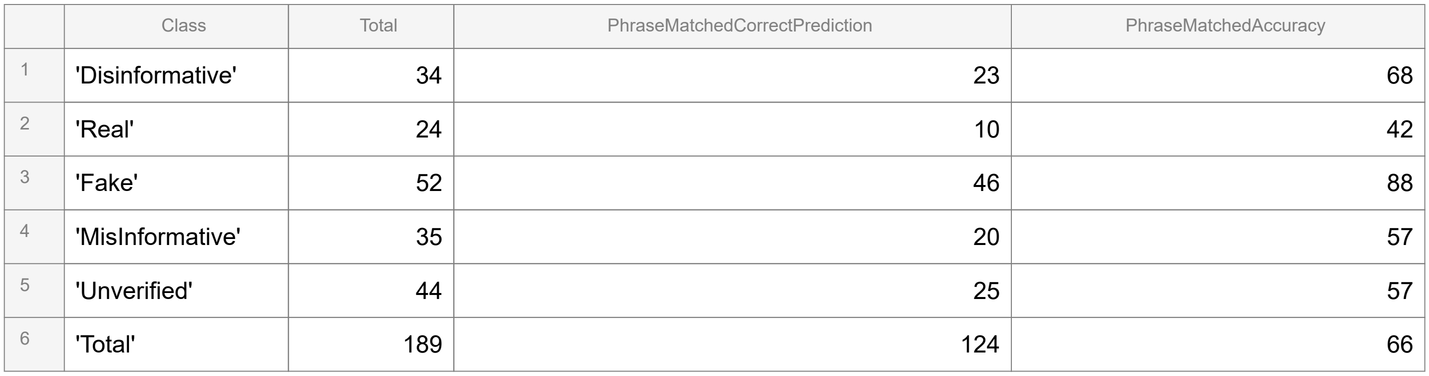


Phrases Matched

SImilarity=   (# of keywords matched) + 2×(# of phrases matched) + ∑(length of each phrase matched)

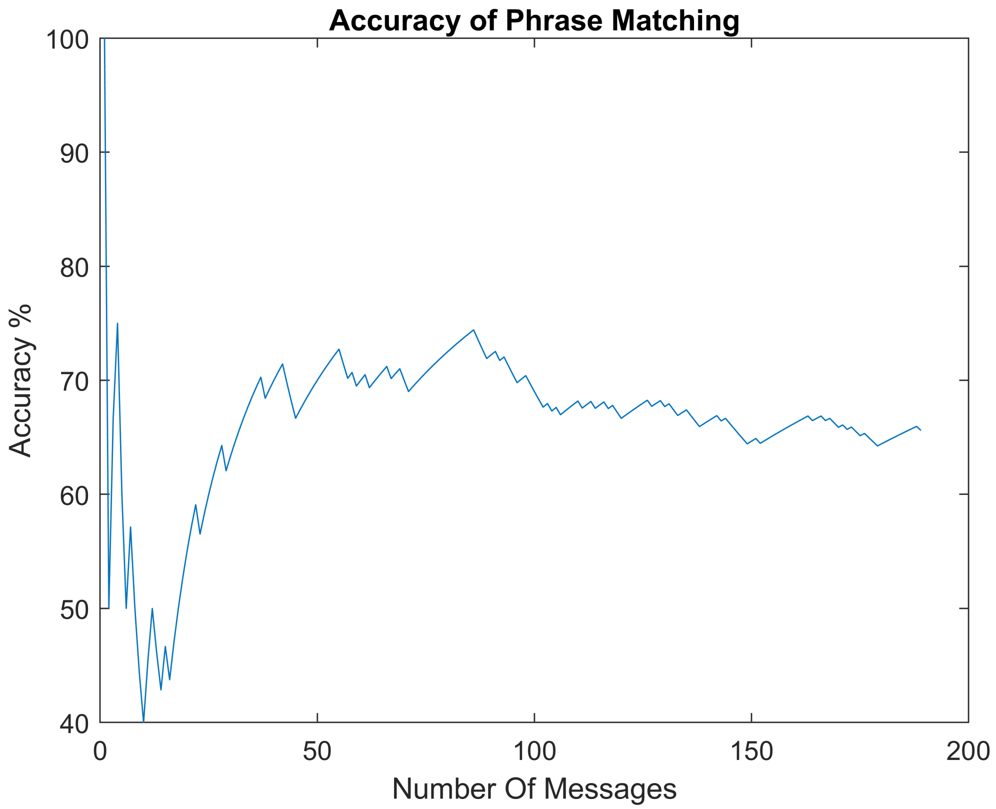
```
py.PhraseProjectPython.getResult()
T = readtable('PhraseResult.csv');
T
```

```
T = 6×4 table
```



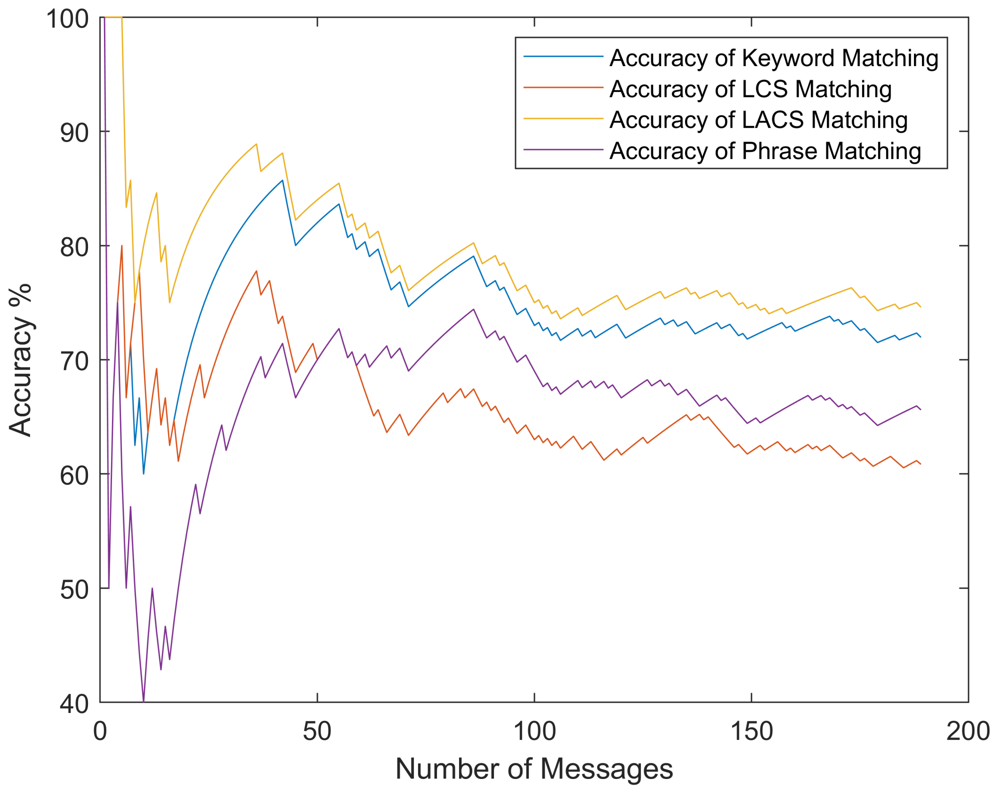
	Class	Total	PhraseMatchedCorrectPrediction	PhraseMatchedAccuracy
1	'Disinformative'	34	23	68
2	'Real'	24	10	42
3	'Fake'	52	46	88
4	'MisInformative'	35	20	57
5	'Unverified'	44	25	57
6	'Total'	189	124	66

```
T = readtable('PlotPhrase.csv');
X=T{:,1};
Y=T{:,2};
savefig('Phrasedata.fig');
close(gcf);
%openfig('LACSdata.fig')
plot(X,Y)
title('Accuracy of Phrase Matching')
xlabel('Number Of Messages')
ylabel('Accuracy %')
```



Final Plot:

```
T = readtable('PlotKeywordMatching.csv');
X=T{:,1};
Y=T{:,2};
plot(X,Y)


hold on
TLCS = readtable('PlotLCS.csv');
XLCS=TLCS{:,1};
YLCS=TLCS{:,2};
plot(XLCS,YLCS)

TLACS = readtable('PlotLACS.csv');
XLACS=TLACS{:,1};
YLACS=TLACS{:,2};
plot(XLACS,YLACS)

TPhrase = readtable('PlotPhrase.csv');
XPhrase=TPhrase{:,1};
YPhrase=TPhrase{:,2};
plot(XPhrase,YPhrase)


legend('Accuracy of Keyword Matching' ,'Accuracy of LCS Matching' ,'Accuracy of LACS Matching'
xlabel('Number of Messages')
ylabel('Accuracy %')

hold off
```


Accuracy %
Number of Messages
Accuracy of Keyword Matching
Accuracy of LCS Matching
Accuracy of LACS Matching
Accuracy of Phrase Matching