Binary Classification Using Bag of Words based on Raw Counts

NLP A1

Gaussian NB:				
	precision	recall	f1-score	support
0 1	0.79 0.30	0.26 0.82	0.39	754 287
accuracy macro avg	0.54	0.54	0.41	1041 1041
weighted avg	0.65	0.41	0.40	1041
SVM:				
	precision	recall	f1-score	support
0 1	0.72 0.00	1.00	0.84	754 287
accuracy			0.72	1041
macro avg weighted avg	0.36 0.52	0.50 0.72	0.42 0.61	1041 1041
Logistic Regres	sion•			
Logistic regres	precision	recal	ll f1-score	support
0 1	0.72 0.00	1.00	0.84	754 287
accuracy macro avg	0.36	0.50	0.72 0.42	1041 1041
weighted avg	0.52	0.72	0.61	1041
Perceptron:				
•	precision	recall	f1-score	support
0 1	0.73 0.36	0.92 0.12	0.82 0.18	754 287
accuracy macro avg	0.55	0.52	0.70 0.50	1041 1041
weighted avg	0.63	0.70	0.64	1041
Random Forest	::			
precision	n recall	f1-score	support	
0 1	0.72 0.00	1.00	0.84	754 287
accuracy macro avg	0.36	0.50	0.72 0.42	1041 1041
weighted avg	0.52	0.72	0.61	1041

Binary Classification Using Bag of Words based on TFIDF:

Gausian NB:

	precision	recall	f1-score	support
0	0.79	0.26 0.82	0.39	754 287
accuracy macro avg weighted avg	0.54 0.65	0.54 0.41	0.41 0.41 0.40	1041 1041 1041

Logistic Regression:

support	f1-score	recall	precision	
754 287	0.84	1.00	0.72	0 1
1041 1041 1041	0.72 0.42 0.61	0.50 0.72	0.36 0.52	accuracy macro avg weighted avg

Random Forest:

	precision	recall	f1-score	support
0 1	0.72 1.00	1.00	0.84	754 287
accuracy macro avg weighted avg	0.86 0.80	0.50 0.73	0.73 0.42 0.61	1041 1041 1041

SVM:

precision	recall	f1-score	support	
0 1	0.72	1.00	0.84	754 287
accuracy macro avg weighted avg	0.36 0.52	0.50 0.72	0.72 0.42 0.61	1041 1041 1041

Perceptron

	precision	recall	f1-score	support
0 1	0.73 0.35	0.91 0.13	0.81	754 287
accuracy macro avg weighted avg	0.54 0.63	0.52 0.69	0.69 0.50 0.64	1041 1041 1041

Multi-class Classification Using Bag of Words based on Raw Counts

Multinomial NB:

precision	recall	f1-score	support	
1 0 3 5 4 2	0.00 0.68 0.00 0.00 0.00	0.00 0.99 0.00 0.00 0.00	0.00 0.80 0.00 0.00 0.00	44 177 23 1 4
accuracy macro avg weighted avg	0.11	0.16 0.67	0.67 0.13 0.54	261 261 261
Logistic Regression		recall	f1-score	support
1 0 3 5 4 2	0.00 0.68 0.00 0.00 0.00	0.00 1.00 0.00 0.00 0.00 0.00	0.00 0.81 0.00 0.00 0.00	44 177 23 1 4
accuracy macro avg weighted avg	0.11	0.17 0.68	0.68 0.13 0.55	261 261 261
SVM precision	recall	f1-score	support	
1 0 3 5 4 2	0.00 0.68 0.00 0.00 0.00	0.00 1.00 0.00 0.00 0.00 0.00	0.00 0.81 0.00 0.00 0.00	44 177 23 1 4
accuracy macro avg weighted avg	0.11	0.17 0.68	0.68 0.13 0.55	261 261 261

Random Forest

precis	ion reca	ll f1-sco	re suppo	rt
1 0 3 5 4 2	0.00 0.68 0.00 0.00 0.00	0.00 1.00 0.00 0.00 0.00	0.00 0.81 0.00 0.00 0.00	44 177 23 1 4
accuracy macro avg weighted avg	0.11	0.17 0.68	0.68 0.13 0.55	261 261 261
	precision	recall	f1-score	support
1 0 3 5 4 2	0.33 0.68 0.00 0.00 0.00	0.05 0.95 0.00 0.00 0.00	0.08 0.79 0.00 0.00 0.00	44 177 23 1 4
accuracy macro avg weighted avg	0.17 0.52	0.17 0.65	0.65 0.15 0.55	261 261 261

Multi-class Classification using Bag of Words based on TDIDF Counts

Naïve Bayes:

	precision	recall	f1-score	support
1	0.00	0.00	0.00	44
3		1.00	0.81	177 23
5		0.00	0.00	1 4
2		0.00	0.00	12
accuracy macro avo		0.17	0.68	261 261
weighted avo		0.68	0.55	261

Logistic Regression :

Logistic Regression :						
	precision	recall	f1-score	support		
1 0 3 5 4 2	0.00 0.68 0.00 0.00 0.00	0.00 1.00 0.00 0.00 0.00 0.00	0.00 0.81 0.00 0.00 0.00	44 177 23 1 4		
accuracy macro avg weighted avg	0.11	0.17	0.68 0.13 0.55	261 261 261		
SVM:						
	precision	recall	f1-score	support		
1 0 3 5 4 2	0.00 0.68 0.00 0.00 0.00	0.00 1.00 0.00 0.00 0.00	0.00 0.81 0.00 0.00 0.00	44 177 23 1 4		
accuracy macro avg weighted avg	0.11	0.17	0.68 0.13 0.55	261 261 261		
Random Forest	: :					
	precision	recall	f1-score	support		
1 0 3 5 4 2	0.00 0.68 0.00 0.00 0.00	0.00 1.00 0.00 0.00 0.00	0.00 0.81 0.00 0.00 0.00	44 177 23 1 4		
accuracy macro avg weighted avg	0.11 0.46	0.17 0.68	0.68 0.13 0.55	261 261 261		
Perceptron :						
	precision	recall	f1-score	support		
1 0 3 5 4 2 accuracy macro avg	0.17 0.67 0.00 0.00 0.00	0.02 0.94 0.00 0.00 0.00	0.04 0.79 0.00 0.00 0.00 0.00 0.00	44 177 23 1 4 12 261		