Your Name:

Your Andrew ID:

Homework 2

Collaboration and Originality

1. Did you receive help <u>of any kind</u> from anyone in obtaining your data for this assignment (Yes or No)? It is not necessary to describe discussions with the instructor or TA.

    If you answered Yes, provide the name(s) of anyone who provided help, and describe the type of help that you received.

2. Did you give help <u>of any kind</u> to anyone in obtaining their data for this assignment (Yes or No)?

    If you answered Yes, provide the name(s) of anyone that you helped, and describe the type of help that you provided.

3. Are you the author of <u>every word</u> of your report (Yes or No)?

    If you answered No:
    a. identify the text that you did not write,
    b. explain where it came from, and
    c. explain why you used it.

Your Name

Your Andrew ID

Homework 2

1   Experiment #1: Baselines

1.1   Parameters

1.2   Results

Reuters Baseline #1						
	NB			SVM		
Category	**P**	**R**	**F1**	**P**	**R**	**F1**
	0.001	0.001	0.001	0.001	0.001	0.001
Macro Average						

Reuters Baseline #2						
	NB			SVM		
Category	**P**	**R**	**F1**	**P**	**R**	**F1**
	0.001	0.001	0.001	0.001	0.001	0.001
Macro Average						

OHSUMED Baseline #1						
	NB			SVM		
Category	**P**	**R**	**F1**	**P**	**R**	**F1**
	0.001	0.001	0.001	0.001	0.001	0.001
Macro Average						

OHSUMED Baseline #2						
	NB			SVM		
Category	**P**	**R**	**F1**	**P**	**R**	**F1**
	0.001	0.001	0.001	0.001	0.001	0.001
Macro Average						

1.3   Analysis

Discuss the differences among the two baselines and the two different learning algorithms. Pay particular attention to differences in accuracy and efficiency, and what may have caused them. Are categories with more training data easier to learn? If so, is it an important difference?

2   Experiment #2: Feature Selection

2.1   Parameters

Document your parameter settings. If you changed the parameters, explain why.

2.2   Results

Report macro-averaged results for each algorithm (i.e., do not report results for individual categories).

	Reuters Number of Features														
	n_1=00			n_2=00			n_3=00			n_4=00			n_5=00		
	P	**R**	**F1**	**P**	**R**	**F1**	**P**	**R**	**F1**	**P**	**R**	**F1**	**P**	**R**	**F1**
NB	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

SVM															

	OHSUMED Number of Features														
	n_1=00			n_2=00			n_3=00			n_4=00			n_5=00		
	P	**R**	**F1**	**P**	**R**	**F1**	**P**	**R**	**F1**	**P**	**R**	**F1**	**P**	**R**	**F1**
NB	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
SVM															

2.3 Analysis

Discuss your results. Are small representations more effective, or are large representations more effective? Does each dataset and/or learning algorithm behave the same way? Does having more features make a difference? If so, is it an important difference? Are the effects similar for small and large classes?

3 Experiment #3: Your Representations

Report your results in a tabular format similar to what was used for Experiments 1-2. Describe your representations. Discuss your reasons for developing each representation. Discuss how well they worked, and how you interpret the results.

4 Experiment #4: Sentiment Baselines

4.1 Parameters

Document your parameter settings. If you changed the parameters, explain why.

4.2 Results

Report results for each category (Good, Ok, Poor), as well as macro-averaged values.

		Apps for Android					
		NB			SVM		
	Category	**P**	**R**	**F1**	**P**	**R**	**F1**
Baseline 1		0.001	0.001	0.001	0.001	0.001	0.001
	Macro Average						
Baseline 2							
	Macro Average						
Custom 1							

	Macro Average						
Custom 2							
	Macro Average						

Cell Phones and Accessories							
		NB			**SVM**		
	Category	**P**	**R**	**F1**	**P**	**R**	**F1**
Baseline 1		0.001	0.001	0.001	0.001	0.001	0.001
	Macro Average						
Baseline 2							
	Macro Average						
Custom 1							
	Macro Average						
Custom 2							
	Macro Average						

4.3 Custom Representations

Describe the custom representations that you used. Explain why you made these choices.

4.4 Analysis

Discuss the differences among the three baselines and the two different algorithms. Pay particular attention to differences in accuracy, and what may have caused them.

5 Effectiveness of the Different Representational Choices

Do you see any trends? Do some techniques consistently work better than others? Do any of the choices affect the stability of results? Do any of the differences seem significant?

6 Effectiveness of the Different Learning Algorithms

Do you see any trends? Does one algorithm consistently work better than another? Is there a difference in the stability of the algorithms? Do any of the differences seem significant?

There is some overlap between this section and observations that you may make in Experiments 1-4. However, in this section you have an opportunity comment on trends that span different experiments, which you can't really do in the earlier sections.