Natural Language Processing - IMDB Movie Review

	Description	Hyperparameters	Epochs	Training Loss	Training Accuracy	Test Accuracy	Comments
Part 3a	Given Model – embedding layer + (LSTM + Batch Normalization+ Dropout)x3 + decoder + output layer	ADAM optimizer with LR=0.001, BatchSize=200, VocabularySize=8000 , Sequence Length=50, HiddenUnits=500, Dropout rate=0.3	75	3.9193	27.71	25.06	The training time is around 3 minutes per epoch. After a short period of increasing, the training accuracy is changing around 26% and doesn't change much (after 50 epochs). And test accuracy is stuck around 25% after 30 epochs. Explaintion of the low accuracy is that the model trys to predict 8000 words.

			a little bit more emotionally into mr. rochester 's job as a definite boss , being his dream had her age . but would not release this flick yet -- nor was it poorly scripted . like the movie two . kellyy 's scrooge was not even in this horrible movie . unbelievable ... . i give this movie a 2 out of 10 . but one his head sings to me that was really disturbing . maybe i used to see this movie because i 'd say you 're going to be happy when she gets it . `` how could he have a ball , they i need it ! '" i 've told him that he wants to kill me , and we did n't bring him to anymore . the rest of the movie gives us an feeling of touched and cuts . in that case it i thought the movie felt good because it was great . it showed a true story of these two girls who sttarted making it so useful in the lives of them and showed with their characters in ways that parents would live in - lesbian and caring . we most could see some of the fans of the show , so i had to strress where they turned out . i was wondering what happened to the documentary of the world going into a kidnapping family of grief and loved how they lived but needed each other to get away with the lovee . this movie did something very well . but , what 's with its excellence being the great great singiing ; dates , musicians , editing , production . photography and acting were uniformly very good . thee plot was extremely believable and with characters and action that
Part 3b	Generated Review - embedding layer + (LSTM + Batch Normalization+ Dropout)x3 + decoder + output layer	Temperature=1.0	

		a lot of fun . the film is very effective , and the acting is superb . the story is enchanting and the acting is very good . the actors are all very good but i 've seen them all in a very different way . i have seen many of the better movies . the acting was good , the story was good , the characters were great , the story was beautiful , the characters were very good and the story was very well done . the acting was good , the story was great , the characters were all very believable and the story line was very good . i thought the movie was great . i loved the way the characters are portrayed . the story is very good . the acting is great , the plot is very good and the characters are all likable and i am so glad i did . i am so glad i sat there and watched it again and it still holds up as well . i really enjoyed this movie , and i am not a big fan of movies like this , but this one is just plain bad . i would n't recommend this movie to anyone interested in the genre . it is not a good film , but it is also a good movie . it is not the best movie i have ever seen . it 's a good movie to watch every day . it 's a great story and a good story for all ages . it 's a great movie , and i would
Generated Review	Temperature=0.5	recommend it to anyone . it 's a great movie , i recommend it to anyone who wants to be entertained

a dead body song , did either charles eye really outside or three who have going out of the .but how someone enjoyed this movie from the only place have stayed in kansas is ridiculous and , i used to warn anybody because they had spent the price of sitting making crap with toys saying severed manages to use a passage to yawn because the show agree with us three or all times -- but wait for his alot . class producers - 5 people who made men coming to think of pointless childhood love scenes as they would then put a stab in . for the fact that lay ' day years later him agents and the bitter daniel were fine , through the animals themselves can act . as had they been cool (with the long spirit) being handled quite well in its later drama theater and i finally mentioned it ! to lay one seriously over passengers since cave system and spencer tracy and cinematography and states were among my disappointment via bollywood movie writers : graham greene fan -- and poor director richard brooks nominations the new legend by `` versus those of the classes and bleak '' just thrown up to this adaptation of a modest teenager on american television , since already posted on `` become rambo iii '' when i was staring his first copy `` chosen of 1984 '' (mike refuses) who jump home in his cameras : the good waitress played by jesse miller who makes disgusting good work for his lost medicine . richard 's mother tries to be dry (trying to just steal the trivia to eventually watch an annoying leads ' damn severed entrance as virgin metal wonder . secretly released some era in 1960

Part	Model	Parameters				Accuracy by Length	Notes
Part 3c	Given Model – embedding layer + (LSTM + Batch Normalization+ Dropout)x3 + decoder + output layer	ADAM optimizer with LR=0.001, BatchSize=200, VocabularySize=8000, Sequence Length=100, HiddenUnits=500, Dropout rate=0.3	52	0.0318	98.86	50 - 72% 100 – 85% 150 – 86% 200 – 89% 250 – 89.5% 300 – 91% 350 – 90% 400 – 91% 450 – 92.5% 500 – 88%	Just fine tune the last LSTM Layer. It seems that this model has a more average accuracy on each sentence length because I just train the last LSTM so the overfit situation is the slightest.
	Custom 1 – embedding layer + (LSTM + Batch Normalization+ Dropout)x3 + decoder + output layer	ADAM optimizer with LR=0.001, BatchSize=200, VocabularySize=8000, Sequence Length=100, HiddenUnits=500, Dropout rate=0.3	20	0.0633	0.9775	50 – 78.5% 100 – 84% 150 – 89% 200 – 91% 250 – 91.5% 300 – 91.5% 350 – 87.5% 400 – 86% 450 – 88.5% 500 – 88%	Tune all the Layers. This model has the worst performance compared to the other two model, since I trained all parameters so it is overfit.

Model	Hyperparameters					Notes
Custom 2 – embedding layer + (LSTM + Batch Normalization+ Dropout)x3 + decoder + output layer	ADAM optimizer with LR=0.001, BatchSize=200, VocabularySize=8000 , Sequence Length=100, HiddenUnits=500, Dropout rate=0.3	20	0.0627	0.9773	50 – 79.5% 100 – 86.5% 150 – 83.5% 200 – 91% 250 – 91.5% 300 – 87.5% 350 – 91% 400 – 87% 450 – 92% 500 – 94%	Tune the 2nd and 3rd LSTM Layer. This model performances relatively good compared to the other two. Its test accuracy is slower than model 1 in sequence length of 150, 300 and 400. It is reasonable since I just trained the last two LSTM layer.