

Conditioned Text Generative Model

Eyal Ben David - 305057416

June 23, 2018

Abstract

In this work we have implemented a conditioned text generation model with the use of IMDB reviews dataset (as introduced in Tutorial 9). Our main goal was to develop a generative language model with a control over the sentiment of the generated review. We have experimented with a character level model and a word level model. After training our model, we have generated 10 of each of the following: positive reviews, negative reviews, and reviews which begin as negative and turn positive. Furthermore, we experimented with two techniques for choosing the next word from the softmax probabilities - 'greedy' and probabilistic. Finally, we evaluated our model with the BLEU score using a sampled test set consisting of 10% of the data sampled.

1 Introduction - IMDB reviews dataset

In this work we plan to tackle the problem of generating sentimented text from the IMDB movie reviews dataset. This dataset consists of 25,000 movies reviews from IMDB, labeled by sentiment (positive/negative). "Keras" provides reviews that have already been preprocessed, and each review is encoded as a sequence of word integers. For purpose of convenience, words are indexed by overall frequency in the dataset. In order to train our model in batches, each batch has to consist of sequences of the same length. Thus, we have set the lengths of all sequences to 100 words. Each sequence longer than that will be truncated, and shorter ones will be padded with "0"s. In order to accelerate training, we chose only the top 6,000 frequent words in the dataset. Notice that during preprocessing we have erased all characters that are not letters, therefore we expected to receive long reviews without any punctuation marks.

2 Character level Vs. Word level models

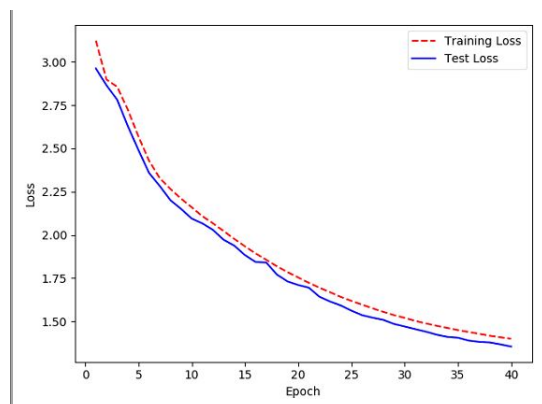
When deciding which model to use - character level or word level, our main goals were to increase the meaningfulness of the generated text. When building both models we noticed that our word based model produced higher quality reviews. We deduce that in order to generate good and meaningful text using a

character model, it is necessary to stack many LSTM layers inorder to capture the relations between groups of characters (words). Hence it is reasonable to assume that word level models will work better solving our task and generate meaningful text. We have tested both these models and will display the results.

3 Character level model

Character level models are trained to predict the next character in a sentence, based on the preceding characters in the sentence. Our model used the IMDB movies reviews dataset for training. By our understanding this model is less adequate for the task of generating text. After choosing an architecture for the model we present the training results in the next graph.

Figure 1: Traning and Validtion loss through each epoch for character level model



In this graph it is well noticed that training had optimized our net results. Unfortunately, during our experiments we have noticed that our generated reviews are not consistent, therefore we assume that the reason is the lack of memory which the net suffers from, even while using a very deep and wide LSTM model. In the following generated reviews we may notice few problems in the charactrer level models.

Predictions 1: Using char level model to predict the next characters

Char level generated reviews:

1. [I] TTuck it was a movie when the second back i was a brough the story and should have a seem the movie and i love special and the time the second good of the best good and who are made and was the sto
2. [I] TT he all he can be a sequel the film has a good film but which is 1972 was the best watching the sense of change the beginning and sex and film as a buck <EOS>
3. [I] T>ing the film who does some possible in the movie was a true screen and a who br br the story a good his story and was bad the film when the movie is just hope to see the seem it present of the re
4. [I] Tow br br the school movie is a did how i have ever seen in the chance but it is a few unfrester consider in the time in a plot but i don't expectation and excellent plays and made i was a speciall
5. [I] TT see i had to the minutes even and disappoint is about a movie has a movie is a was good that is a movie because of the movie was the first movie i was a some of the other and it was a film br br
6. [The] br br br but the entertaining slash movies with the discuster who seems but it was put br br the movie movie was a seriously and the screen in the movie it has a story that was some because it
7. [The] T> br br br br recommends i was very good well in the book at a lot of the movie is a fall film the film is a great performances of the story of budget has <EOS>
8. [The] my all i can start of his show was the man of the movie because is a clas with a great and movie is a story is the original and it's sense and impression i saw the <EOS>
9. [The] T> this is a series the film would see it would see it is a dispect the fine of my favorite in the film was not the script as which is a beautes are the film is a sequence the complete and how th
10. [The] be an the film was saw the film is not be a recelled that can't makes so because of the plot is a really show of the movie is a characters movie and the first production but the film is a mean
11. [The] br been a depect in the acting so was a lot of the screen and

american movie i had the star is was a good and stupid to expect to see
it is a storywere a<EOS>

12. [The] i watched it a real that is a too all a lot of the plot compin
of compenter the cross is a movie the film when i was i really in the one
of the time it was so bad the plot is a real life is a

13. [The] from a star and man as a start and excellent because all a
complete with success of the premise the parts show is a couple at the
movie of a story the film years are she was a big was really a

14. [The] the film i didn't get i like the film was a comment to be
the movie it was show when it was a star it is a movie but they are
great because and the film as a man some a film was a who like the

15.[The] he so my director to get the his story seems and i thought
it deserve been a star of a movie stephen were for the book as a his
problem and it's i finally saw the story in the school of the tw

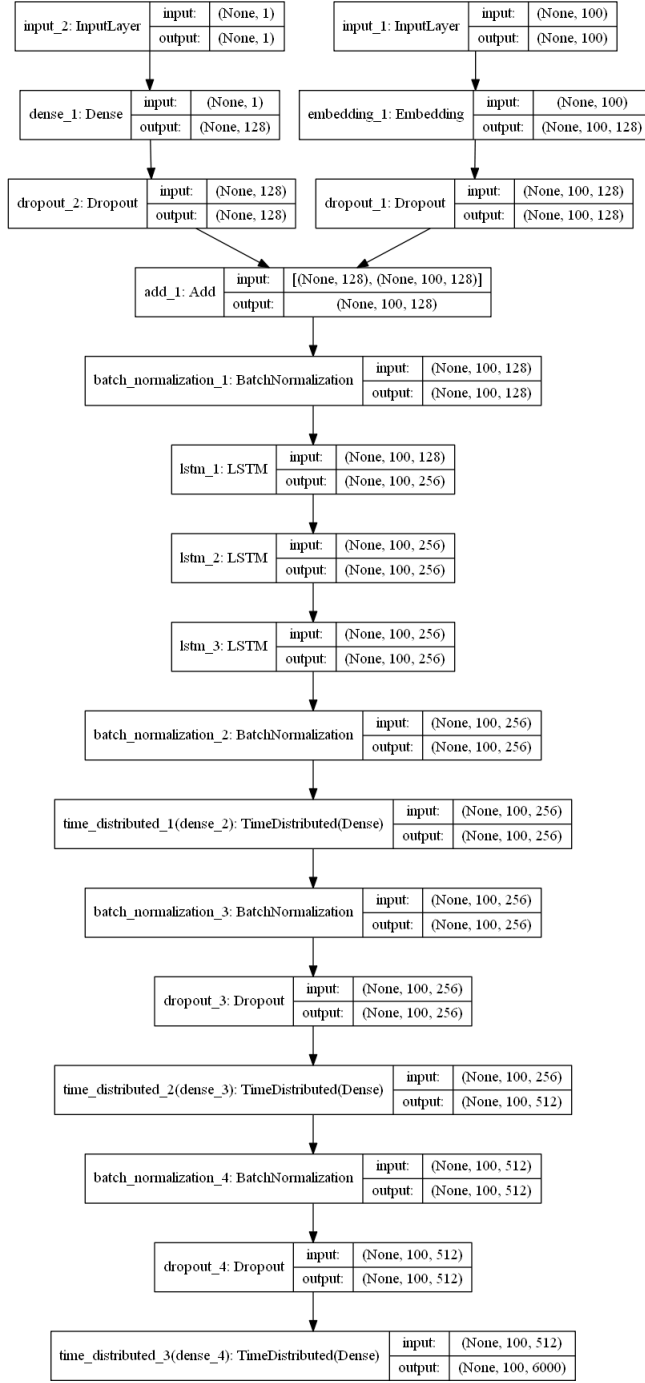
4 Word level model

Word level models are trained to predict the next word in a sentence, based on the preceding words in the sentence. Our model uses the IMDB movies reviews dataset for training. We have suggested that this model may be more adequate for this task.

4.1 Methods and architecture

To solve the presented problem we have chosen to build a network which receives inputs from two sources, sentiment of the review and the preceding text. The sentiment goes through a dense layer in order to embed it to a size of 128. Correspondingly, part of the sentence is entered into an embedding layer which later transfers to the same dimension as the sentiment channel - 128. After bringing all inputs to the same dimension we merge them by 'add'. Subsequently the data goes through three LSTM layers and then through several additional 'time distributed' dense layers. At the final layer we have a 'TimeDistributed' 'softmax' with the size of the total vocabulary size. In the next figure we will display the model block diagram.

Figure 2: Model block diagram



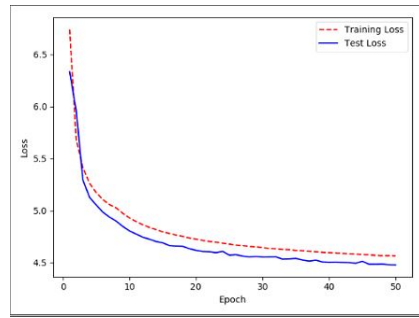
4.2 Results

The training results for the validation set and the training test are shown in the next table and graph plot.

Table 2: Training and Validation loss for word level model

	Loss
Training set	4.5636
Validation set	4.4765

Figure 3: Training and Validation loss through each epoch



We summarize the results of the word level model using two techniques which allow us to choose the following word by showing the generated reviews, and by evaluating them using the BLEU score.

4.2.1 'Greedy' technique

This technique for choosing the subsequent word takes out of the softmax output only the highest value and introduces the appropriate word to the review. We expected this method to produce only one output per each different review start. Hence we have given our model different beginnings of reviews in order to observe different reviews generated out of the greedy technique.

Predictions 2: Using the greedy technique to predict the next word

Positive reviews:

1. [i think] this movie is a great movie i have to say that i was very excited to see it again and i was pleasantly surprised by the movie i was very impressed with the movie and i was very impressed with the movie i was surprised by the ending and the story line was very good and the story was very good and the story was very good and the story was very good and the story was very good and the story was very good and the story was very good and the story was very good
2. [i thought] this movie was a great movie i was very impressed by the movie and i

was very impressed by the movie i was very impressed by the movie and the story was
very good and the story was very good and the story was very good and the story was
very good and the story was very good and the story was very good and the story was
very good and the story was very good and the story was very good and the story was
very good and the story was very good and the story

3. [i wanted] to see this movie on dvd and i was pleasantly surprised by the first time i was a kid and i was pleasantly surprised by the movie i was very impressed by the movie and i was very impressed by the movie i was surprised that the movie was a bit slow and the story was very good and the story was very good and the story was very good and the story was very good and the story was very good and the story was very good and the story

4. [it was] a great movie and i was pleasantly surprised by the movie i was very
impressed by the movie and the story was very good and the story was very good
and the story was very good and the story was very good and the story was very
good and the story was very good and the story was very good and the story was
very good and the story was very good and the story was very good and the story
was very good and the story was very good and the story was very good <EOS>

5. [next time] i saw this movie on dvd and i was pleasantly surprised by the
movie i was very impressed by the movie and i was very impressed by the movie
i was surprised by the story and the story line and the story was very good
and the story was very good and the story was very good and the story was very
good and the story was very good and the story was very good and the story was
very good and the story was very good and the story was very good and the
story was

[illegible]

7. [the movie] is a great movie and it is a great movie and it is a great movie and it is a great movie and it is a great movie and it is a great movie to watch and it is a great movie for kids who love the movie and enjoy it <EOS>

8. [you would be] a fan of the original series but i have to say that i was very impressed by the movie and i was pleasantly surprised by the movie i was very impressed by the movie and the story was very good and the story was very good and the story was very good and the story was

very good and the story was very good and the story was very good and the story was very good and the story was very good and the story was very good and the acting was great the story was

9. [i was] lucky enough to see this movie on dvd and i was pleasantly surprised by the movie i was very impressed by the movie and i was very impressed by the movie i was surprised by the ending and the story line was very good and the story was very good and the story was very good and the story was very good and the story was very good and the story was very good and the story was very good and the story was very good and the story was <EOS>

10. [my friend]and i were a kid and i was a little disappointed with this movie i was very impressed by the movie and i was very impressed by the movie i was surprised by the ending and the story line was very good and the story was very good and the story was very good and the story was very good and the story was very good and the story was very good and the story was very good and the story was very good and the story was very good and the story was <EOS>

Negative reviews:

1. [i think] this movie is a bad movie i have to say that i was expecting a movie that was a good movie i was wrong i was expecting a movie that was a good movie but it was a waste of time and money i was wrong i was expecting a movie that was a great movie and i was very disappointed with the movie i was very disappointed with the movie and the acting was great the story was very good and the story was very good and the acting was great the story was very good

2. [i thought] this movie was a disappointment i was expecting a lot of people who had seen it and i was wrong i was expecting a movie that was a good movie i was wrong i was expecting a movie that was a good movie i was wrong i was expecting a movie that was a great movie and i was very disappointed with the movie i was very disappointed with the movie and the acting was great the story was very good and the story was very good and the story was very good and the acting was

3. [i wanted] to see this movie because it was a great movie and i was wrong i was expecting a movie that was a good movie but it was a waste of time and money i was wrong i was expecting a movie that was a good movie i was wrong and i was surprised by the ending i was very disappointed with the movie and the acting was great the story was very good and the story was very good and the story was very good and the story was very good and the acting was great

4. [it was] a very good movie and i was very disappointed with the movie i was expecting a lot of the characters were very good and the acting was terrible the acting was terrible the acting was terrible the acting was terrible the acting was terrible the story was very good and the story was very good and the story was very good and the story was very good and the story was very good and the story was very good and the acting was great the story was

5. [next time] i saw this movie on cable and i was very disappointed with the movie i was expecting a lot of people who had seen it and i was wrong i was expecting a movie that was a good movie i was wrong i was expecting a movie that was a great movie and i was very disappointed with the movie i was very impressed with the movie and the story was very good and the story was very good and the story was very good and the story was very good and the acting was great the

6. [you should] be disappointed by the first half of the movie i was expecting a movie that was a disappointment and i was not expecting much to see it i was wrong i was expecting a movie that was a good movie but it was a waste of time and money to watch it again i was very excited to see it again and i was very disappointed with the movie i was very disappointed with the movie and the acting was great the story was very good and the story was very good and the story was <EOS>

7. [the movie] is a waste of time and money to watch it i was expecting a lot of movies that were so bad that i was expecting a movie that was a good movie but it was a waste of time and money to watch it i was wrong i was very disappointed with the movie and i was very disappointed with the movie i was very disappointed with the movie and the acting was great the story was very good and the story was very good and the story was very good and the acting was <EOS>

8. [you would be]disappointed by the first half of the movie i was expecting a movie that was a disappointment and i was not expecting much to see it i was wrong i was expecting a movie that was a good movie but it was a waste of time and money to watch it again i was very excited to see it again and i was very disappointed with the movie i was very disappointed with the movie and the acting was great the story was very good and the story was very good and the story was <EOS>

9. [i was] very disappointed with this movie i was expecting a lot of people who had seen it and i was wrong i was expecting a movie that was a good movie i was wrong i was expecting a movie that was a good movie

i was wrong i was expecting a movie that was a great movie and i was very disappointed with the movie i was very disappointed with the movie and the acting was great the story was very good and the story was very good and the acting was great the story was <EOS>

10. [my friend] and i rented this movie and i was expecting a lot of fun to see the movie i was expecting a lot of fun to watch i was expecting a movie that was a good movie i was wrong i was expecting a movie that was a good movie and i was very disappointed with the movie i was very disappointed with the movie and the acting was great the story was very good and the story was very good and the story was very good and the story was very good and the acting was great

Negative reviews that turn to positive:

1. [i think] this movie is a bad movie i have to say that i was expecting a movie that was a good movie i was wrong i was expecting a movie that was a good movie but it was a waste of time and money i was wrong i was expecting a movie that was a great movie and i was very disappointed with the movie i was very disappointed with the movie and the acting was great the story was very good and the story was very good and the acting was great the story was very good

2. [i thought] this movie was a disappointment i was expecting a lot of people who had seen it and i was wrong i was expecting a movie that was a good movie i was wrong i was expecting a movie that was a good movie i was wrong i was expecting a movie that was a great movie and i was very disappointed with the movie i was very disappointed with the movie and the acting was great the story was very good and the story was very good and the story was very good and the acting was

3. [i wanted] to see this movie because it was a great movie and i was wrong i was expecting a movie that was a good movie but it was a waste of time and money i was wrong i was expecting a movie that was a good movie i was wrong and i was surprised by the ending i was very disappointed with the movie and the acting was great the story was very good and the story was very good and the story was very good and the story was very good and the acting was great

4. [it was] a very good movie and i was very disappointed with the movie i was expecting a lot of the characters were very

a lot of people who had seen it and i was wrong i was expecting a movie that was a good movie i was wrong i was expecting a movie that was a good movie i was wrong i was expecting a movie that was a great movie and i was very disappointed with the movie i was very disappointed with the movie and the acting was great the story was very good and the story was very good and the acting was great the story was <EOS>

10. [my friend] and i rented this movie and i was expecting a lot of fun to see the movie i was expecting a lot of fun to watch i was expecting a movie that was a good movie i was wrong i was expecting a movie that was a good movie and i was very disappointed with the movie i was very disappointed with the movie and the acting was great the story was very good and the story was very good and the story was very good and the story was very good and the acting was great

Following that, we have tested our model using the greedy technique, with the BLEU score. In the table presented below, we present the BLEU score results for this model.

Table 3: BLEU scores for the greedy technique

Test	Score
BLEU-1	0.981513
BLEU-2	0.854365
BLEU-3	0.763587
BLEU-4	0.584503

4.2.2 Probabilistic technique

This technique for choosing the following word utilizes all of the softmax outputs as probabilities for each word to be the following word, and randomly sampling (using Multinomial model) the subsequent word. Initially we wanted to observe the predicted reviews using this technique.

Predictions 3: Using the Probabilistic technique to predict the next word

Positive reviews:

1. [i think] this is an excellent film and the acting is wonderful the only thing that makes this movie really has a great movie is the story and the story is excellent and a bit too deep but the acting is so well written the story is very simple and the acting is great the acting is great the story is about a group of young girls who are sent to prison to live up to a small town he wants to go to the town to stop the daughter of a girl to the <EOS>

2. [i thought] the first time i was a kid i was stunned by the plot and the story of a young boy and what we all know was the movie is a bit slow and the movie is very funny i was impressed by the acting i found it hard to see if you have to see this film it is a very funny movie that has a good plot and you don't know whether you are looking for a movie like this then you will love it i have to say that it is a great movie <EOS>

3. [i wanted] to see this movie twice and i was very impressed by the fact that i had to watch it because i was a fan of the original series and i have to admit that i am a fan of the original book and i am not a huge fan of the book and i love the movie and i am a big fan of the original book and i think it is a very very good movie with great characters and good performances as they were all in the world especially if you are a fan of

4. [it was] a very good movie but it was a great movie i was totally impressed by the story and the story lines the story was great and the dialogue was wonderful the story was well written and the plot was very realistic and the story was good and the movie was just as good as the original and the only reason i was watching it was because of the fact that it was a great story but it was also a very good movie it was a very good film and it was a great one <EOS>

5. [next time] i watched this movie when i was younger i was very disappointed when i saw it i was surprised to see it in the theater and i was very excited about it i still have to see it again and i loved it it was a perfect movie and i always enjoyed it i thought it would be a great movie a lot more than the movie is at least the best of all i was pleasantly surprised by the movie in this movie and i

was surprised to see it again and i think it is

6. [you should] be disappointed to see this movie for the first time i was completely impressed with this movie i really enjoyed the movie and it was not a movie but it was better than the first two films and it was a great movie and it is a good movie to watch br br the story is very much a bit of a world of events and the scenery is very well done and it is a great movie if you read the book and watch the film and enjoy it i recommend it <EOS>

7. [the movie] is a bit dated and it is a great film with a great cast and an excellent cast by the main characters the funniest part is the music but the acting is superb and the production values are excellent and the story is a bit slow and not very funny and the acting is realistic the story is a bit confusing and the story is very interesting and the story is a bit dated and the story is way too long and the ending is full of surprises and the story is so terribly realistic and the

8. [you would be] able to watch a movie about a murder friendship in the first place i was looking forward to seeing this film i was shocked i was in the theater and was disappointed to see it again and i thought it was a movie that i thought was a little slow and i was very impressed with the movie and it was great to watch and i was really surprised by the plot and the acting and the acting so the story was really good i don't know where they did in this movie but it <EOS>

9. [i was] lucky enough to watch this film when it was first released in the uk and i was pleasantly surprised by the movie i was so excited to see it at the time i was excited to see it again i was very young and i thought it was a great movie i think the acting was pretty good the acting was very good the acting was great the acting was great the story was hilarious the story was fascinating and the story was well developed and the story was good and the plot was very good i

10. [my friend] and i laughed and have a strong time and i have to say that this movie shows how the movie is so dark and touching it is a bit more complicated than a horror movie it is a very interesting film and it is a very good movie the story is very interesting

and the story is very good and the story is very good
and the music is brilliant the story is so simple and
well acted it's not about the film and the characters
are very good the cast is fantastic the plot is amazing

Negative reviews:

1. [i think] this movie is a waste of time i thought it
was a good idea to watch it and i don't know what it is
about but if you like movies like that you will be
disappointed with the movie well i was a bit confused
for the end and i was surprised by the plot and the
costumes the acting was very good i was pleasantly
surprised by the movie but i was so excited that i
was expecting a great movie to see that i am not a
fan of the original movie in my <EOS>

2. [i thought] i was a huge fan of horror flicks and have
seen this movie when i watched it i was really disappointed
by the first 15 minutes of the movie but i was wrong the
acting was terrible the plot was painful and the acting was
terrible the story was interesting the dialogue was great
the plot was very interesting and i think it was so corny
that it was very slow and i think it was a bit too much br
br i don't like to know why the first one was made in <EOS>

3. [i wanted] to see this movie in the theater and i was
surprised that it was a complete waste of time i was happy
to see this movie i was very disappointed and i have to
say that i was really disappointed the acting was terrible
and the story was ridiculous and the story was very good
and i think it's not a shame i think it is a little better
than the first way the jokes are so full of humor and the
acting is great the actors are wonderful and the story line
is not <EOS>

4. [it was] a disappointment to see a good example of the
original novel and this is a film that i am not a fan of
independent films i have to say that i was the only reason
to see this movie i would have been disappointed i was so
excited to see it again and i thought it was a great film

to see the movie with the lights out of the theater in the end it was a very enjoyable movie but it has an outstanding cast and the acting is beautiful the story is good and the

5. [next time] i rented this movie i decided to check it out and it was a disappointment i am a fan of the original book i really like the movie and i love the film for the first time i saw it and i thought it was a very boring movie with great performances and great music the movie is a bit slow and simple the story is simple and the ending is superb the story is about a young girl who is sent to the hospital and is a new school man and is very sick and <EOS>

6. [you should] probably have a lot of fun to watch this movie and i have to say i was really bored to see it again and i was disappointed to see the acting was very bad the acting was awful the dialog was stilted the special effects were terrible and the only thing i was expecting is the story line and the dialogue too long the story is very good and the story is just great the film is so easy to find a film that is also the best of the year i think they have <EOS>

7. [the movie] was a bit short but the acting was bad and the acting was poor the story was weak the actors were good and the story was really bad and the acting was terrible but the story was so bad the movie was not bad it was a great premise and i think it was a great story for kids i love it it was a great movie i think that i think it was so good that it is a great movie i have seen it twice in a long time and i still enjoy it it

8. [you would be] interested in a film that is a poor movie with a great cast this movie is a total waste of time i have seen the movie and was completely disappointed the story was weak the acting was atrocious the story was bad and the story was just bad the acting was outstanding the costumes the costumes and the writing were great the characters were beautiful and the actors were great and the story line was fantastic and the characters were great and the story was very good the music was great and the music was great

9. [i was] excited to see this movie and was very disappointed with the movie i would never see it in the theater i was hoping that the movie was made in the time of the first two

episodes and it was a little too long br br i really loved the story and i was surprised by the story of the war the story was superb and the story line was so good that it had a lot of humor in the movie it was a bit more interesting than it was in the movie the ending is <EOS>

10. [my friend] and i rented this movie with the exception of the movie and i was looking forward to the first 15 minutes and i was disappointed the thing i was expecting from the first episode was on the basis of the movie of the original were good and the acting was okay the story was very realistic and the story was very realistic and the acting was superb the acting was great the characters were just perfect the movie was great the characters were good and the story was great i also liked the movie i still liked

Negative reviews that turn to positive:

1. [i think] this movie was a waste of time i have to say that i was the only thing that i would have had to watch a movie about a group of people who have to have a good time on the planet it is a waste of time and money to see it it is just a great film br br families are a bit old and i think they are not even the best of the film and the acting is great and the story is very good and the story is great and the story is

2. [i thought] the movie was a disappointment i did not understand why it was a movie for many reasons and it was so bad that it would be a true experience to the end of the movie it was so bad and it was really bad i have seen better movies and the fact that they were not in it so i thought it was a good movie and i have seen it again and i liked it and i love it br br i thought it was the best movie i have ever seen the ending was <EOS>

3. [i wanted] to be honest to see this film i thought it was a great idea to watch i was very disappointed with the film br br i am not sure what happened to the movie but rather much the plot was ridiculous but it was just a movie that i cannot help but have to say that it is not very funny and not very bad the acting is good the characters in this movie are very good the actors are

great and the story is also not so good the story is a bit slow and the

4. [it was] a great movie and i was a huge fan of the series and it was a very good movie because i was hoping that it was a spoof of the book i have to say that it had a very good cast in it and an extremely uneven storyline which is very well done especially the big thing i have ever seen i didn't want to see it again and i think it was really well written and i have to admit that i was very impressed with the movie i was amazed for the story and

5. [next time] i saw this movie and thought it was a very bad movie but when i saw it i was expecting a good movie and i went to see it again and i had to watch it again and i cannot believe that the story is not very good it is the best thing about the movie br br the story is interesting and very well done the story is very realistic and the action is superb the acting is great and the story is very well done and the story is very interesting and the story is

6. [you should] be disappointed by the ending of this movie and the fact that it is a joke but this is an insult to a horror movie it also takes place in the late 1970s as a result of a film that is a kind of movie that is so bad that i felt that the film was made in new york in the 80's and it is a masterpiece that i have never seen the movie as a child i was pleasantly surprised it was so funny i am at the beginning of the movie br br <EOS>

7. [the movie] is just so bad that it is the worst movie i've seen in my life and i say it is a bad movie br br i mean this is a movie that has no redeeming qualities but it is so bad that the characters are so bad that the plot is very good but it is a great movie br br the story is pretty simple and the acting is very interesting the characters are good and the story is only very realistic and the story is excellent and the story is very well acted and <EOS>

8. [you would be] a fan of the original series but this film is a joke i am not a big fan of this movie

but i was expecting something to be put on the film
 br br i have a bad time to see it again but i was
 disappointed i was thinking about it i found it
 impossible to believe that the movie was a bit
 dated and it was a great movie for kids to see it
 again i would have been wrong with and i was
 pleasantly surprised in this movie i was surprised
 to see

9. [i was] excited to see this movie when i was younger
 i was wrong and i was really disappointed it was a
 great film and i was so glad that i had to watch it
 again and i was laughing out loud and even the bad
 guys were good but i think it was a good movie i love
 it br br the movie is awesome the story is so funny
 and the story is good and the characters are great
 and the plot is a lot more than a bit good and i love
 the film right <EOS>

10. [my friend] and i sat through this movie and thought
 it was a fun experience i love the fact that it is
 a bad movie and it has a lot of action and turns in
 the movie the characters are good and the story is
 about a young woman who needs to be a boy and his wife
 has been in love with her and they are also not so
 stupid and the girl is a bit more than a girl and the
 police is mad and the film is a bit cheesy the acting
 is great and the

Following that, we have tested our model using the probabilistic technique, with the BLEU score. In the table presented below, we present the BLEU score results for this model.

Table 4: BLEU scores for the probabilistic technique

Test	Score
BLEU-1	0.991961
BLEU-2	0.967599
BLEU-3	0.896431
BLEU-4	0.719307

5 Conclusions

In this work, we have proposed an LSTM model which uses word-level representations. This model Embeds sentences to a dimension of 128, while corre-

spondingly densing a sentiment value to the same dimensions and merging them together. It then after encodes the merged data using Bi-LSTM units. We have also demonstrated the superiority of the word level model when compared to the character based models for the given task. Our model generated meaningful sequences of reviews, but due to lack of punctuation marks the reviews generated were less readable then expected. Furthermore we have tested the results using the BLEU score and got good results.