

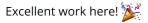
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# LSTM Homehelper Chatbot

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#### HISTORY

# **Meets Specifications**



You implemented a seq2seq model that is generating valid output for the questions. This is a very complex task and you handled it successfully.

If you are interested in language processing models, I suggest you read about the GPT models which are the state-of-art models for language processing. Here are some references:

- https://towardsdatascience.com/understanding-gpt-3-in-5-minutes-7fe35c3a1e52
- https://www.altexsoft.com/blog/language-models-gpt/
- https://www.makeuseof.com/gpt-models-explained-and-compared/

Best regards!

## Implement a LSTM neural network for text generation

The encoder hidden state is accepted successfully into the decoder.

Very nice! The encoder module consists of two layers: an embedding layer and an LSTM layer. The outputs of the LSTM layer are in the encoder's forward function.

Here are some tricks to train an LSTM net: https://medium.com/@yousufdata/6-tips-to-tweak-your-lstm-bilstm-15fd02685c8

Decoder successfully turns the target string and encoder hidden state into an output.

Good job using the decoder to generate the outputs of the network. This post explains how the encoderdecoder architecture works.

The Seq2Seq can be called individually to instantiate the encoder and decoder models. The model can accept inputs for the encoder/decoder and produce a valid output.

The Seq2Seq model is a composite of the encoder and decoder modules.

I suggest you see this video explaining how seq2seq networks work: https://www.youtube.com/watch? v=L8HKweZIOmg

## Train the LSTM neural network parameters.

Select an appropriate optimizer and loss function.

```
optimizer = torch.optim.SGD(model.parameters(), lr=learning_rate)
criterion = nn.NLLLoss()
```

The NLLLoss is implemented. Do you know the differences between NLLLoss and Cross Entropy Loss? Please check it here.

Turn the sentence (source, target) training data into index vectors that are appropriate for the embedding layers of the model.

w2v = gensim.models.Word2Vec.load('brown.embedding')

The Gensim W2V model is used for the embedding layer.

Print the epoch and loss from the training loop.

The model is generating valid output for the questions.



Type 'exit' to finish the chat.

- > which decade did beyonce become famous?
- < graduation -
- > when did beyonce become popular?
- < september 2015 , 2011
- > which artist did beyonce marry?
- < jay z
- > when did beyonce take a hiatus?
- < january 2005
- > what magazine rate beyonce as the most popular?
- > what race was beyonce's father?
- < paris
- > in what year kanye premier?
- < 1825
- > what brand did kanye struck a deal with?
- > the fashion line in paris shown what review?
- < coachella
- > exit

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