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Part 1:
generation:

Give the hyperparameters for your best network on classification task below. Note any other changes you made to the base network in addition to the hyperparameters listed in the table below.

Hyperparameter	Value
RNN type:	LSTM
Number of layers:	1
Hidden layer size:	200
Learning rate:	0.01

In model.py and in addition to the base network, I have added the following:

1. Gaussian noise in hidden layers initialization to introduce some randomness
2. nn.init.xavier_uniform_ to initialize weights

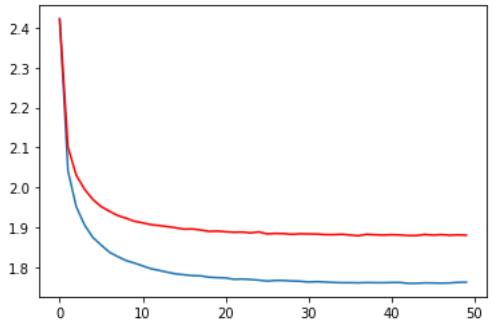
In MP4_classification, I added the following:

1. Learning rate scheduler (ReduceROnplateau or Cosine AnnealingLR)
2. Gradients clipping to avoid exploding gradients problem

Give an example 1000 character output from your network:

The heather mean and shall mare the best the was the shall the gentle heart of the place the proming of the er e and for your tord uple the see of the so reard that he are the enessen lied the seed the from the dear to his s o manger the fare the word in the are the word in the see this the have the seaten to the tord the word's shall not the sear the war, them the with the would man the come to so have the hand of his so farting the for at thi s son and stand his shall with so man in her his man the heart the come not of the well the pringan shall be so this not the sore the word to the senting so shall have shall have the conders the stand so that can the worst t he meat to say, what mare the soul the mate the soul to end the seath the thee the read the singer the shall in t he come the way, and he a thee the that the she stard of the words the part and the pords of the with the bods, the have she shall may we fall the more the will soul to the seer that of the pray shall have the soor the.

Insert the training & test loss plot from your RNN generation notebook below:



classification:

Give the hyperparameters for your best network on the classification task below. Note any other changes you made to the base network in addition to the hyperparameters listed in the table below.

Hyperparameter	Value
RNN type:	LSTM
Number of layers:	1
Hidden layer size:	250
Learning rate:	0.001

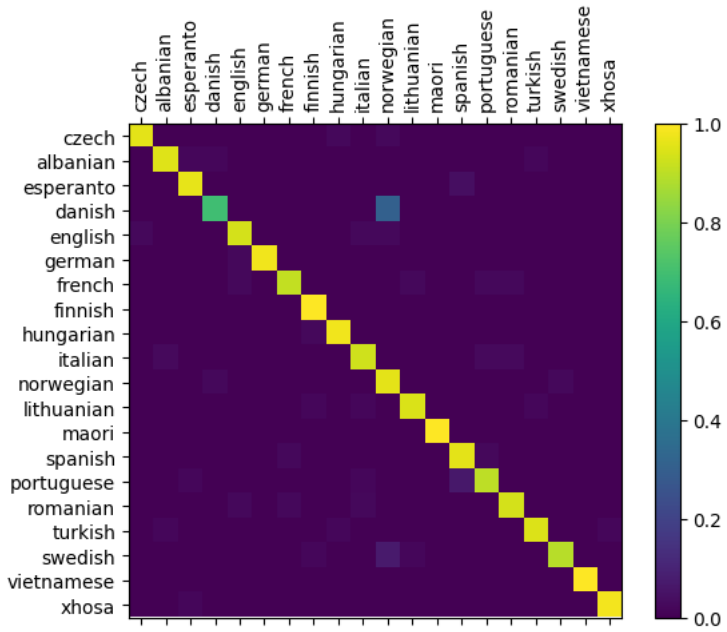
In model.py and in addition to the base network, I have added the following:

3. Gaussian noise in hidden layers initialization to introduce some randomness
4. nn.init.xavier_uniform_ to initialize weights

In MP4_classification, I added the following:

3. Learning rate scheduler (ReduceROnplateau or Cosine AnnealingLR)
4. Gradients clipping to avoid exploding gradients problem.

You should reach the Kaggle accuracy benchmark with your Kaggle submission. Your notebook evaluation results should be similar to your performance on Kaggle. Insert the confusion matrix image output from your best model, and report the corresponding accuracy:
Text accuracy is 0.93, accuracy on Kaggle is 0.57



Part 2:

Describe where your dataset came from, give an example from your training dataset (1000 characters), give an example output from your model trained on the dataset (1000 characters), and detail the hyperparameters you used to train a model on the dataset.

I used wikitext-2 as a dataset.

The example from training dataset is: “Robert <unk> is an English film , television and theatre actor . He had a guest @-@ starring role on the television series The Bill in 2000 . This was followed by a starring role in the play Herons written by Simon Stephens , which was performed in 2001 at the Royal Court Theatre . He had a guest role in the television series Judge John <unk> in 2002 . In 2004 <unk> landed a role as " Craig " in the ep isode " Teddy 's Story " of the television series The Long Firm ; he starred alongside actors Mark Strong and D erek Jacobi . He was cast in the 2005 theatre productions of the Philip Ridley play Mercury Fur , which was pe rformed at the Drum Theatre in Plymouth and the <unk> <unk> Factory in London . He was directed by John <unk> and starred alongside Ben <unk> , Shane <unk> , Harry Kent , Fraser <unk> , Sophie Stanton and Domi nic Hall . In 2006 , <unk> starred alongside <unk> in the play <unk> written by Mark <unk> . He appeared on a 2006 episode of the televisio"

The example from model is "The world was a dull plax and I felt so lonesome. I didn't know how to get out of my own head. I decided to go to the pab but my legs were felt like lead. When I arrived, the bar was bery crowederd and I felt so anxiety. I ordererd a beer but the bartender gave me a burger. I thought it was a bit weird but I just shrugged it off. As I was eating, I noticced that it was undercooded and my stomache started to hurt. I wanted to leav but I couldn't find my keys. I lookd everywhere but they were nowhere to be found. Finally, after what seemed like hours, I found them in my pocket. I left the bar and got into my car. As I was driving, I realized that I forgot to put on my seatbelt. I tried to reach for it but I was too late. Suddenly, a car came out of nowhere and hit me from behind. I blacked out and when I woke up, I was in a hospital. The nurse told me that I had a broken leg and that I would need surgery. I couldn't believe it. All of this happened because of my carelessness. I learned m"

The Hyperparameters that I used and give me the best performance is:
input_size = vocab_size
embedding_size = 300
hidden_size = 1024
num_layers = 10
dropout = 0.05
weight_dropout = 0.05
batch_size = 1024
seq_length = 1024
learning_rate = 0.001
num_epochs = 5000
bptt=2000