

Theory and Practice of Deep Learning

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Week 9 Coding HW

1 Quick README

Main code is hw.py where training occurs there

sample.py is a playground code where one can run it in the format

```
python sample.py <starting character(s)>
```

that would produce sentences with the respective starting characters

outputs.txt contains all the samples across epochs

2 Train and Test

2.1 Overview

Training was done on a Windows Desktop with a GTX1060 running python 3.6.6 and torch 1.0.0

Sample.py was tested on a Macbook pro with torch 1.0.1.post2 and python 3.6.8

Some hyperparameters used were:

- learning rate: 0.0005
- # of layers: 2
- # of hidden dim: 200
- # iterations before sampling: 3000
- Criterion: Negative Log Likelihood

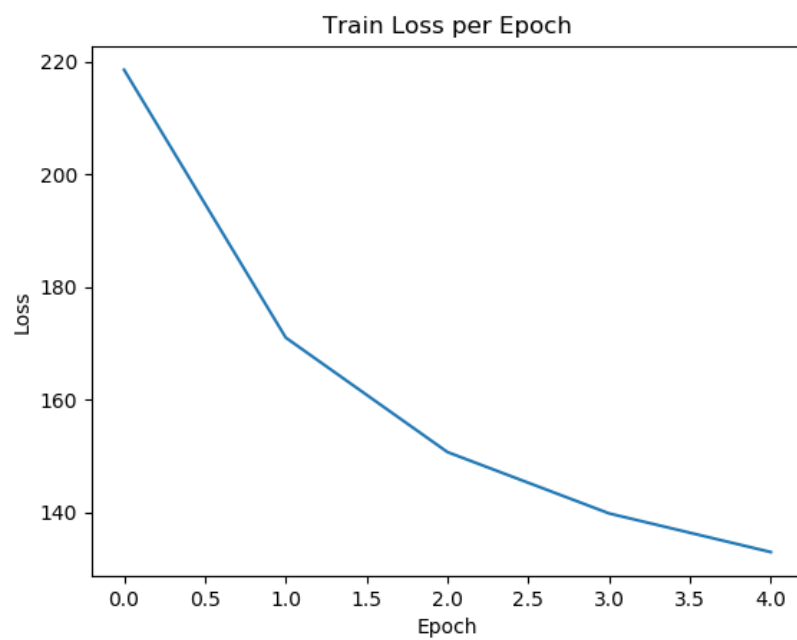


Figure 1: Train Loss

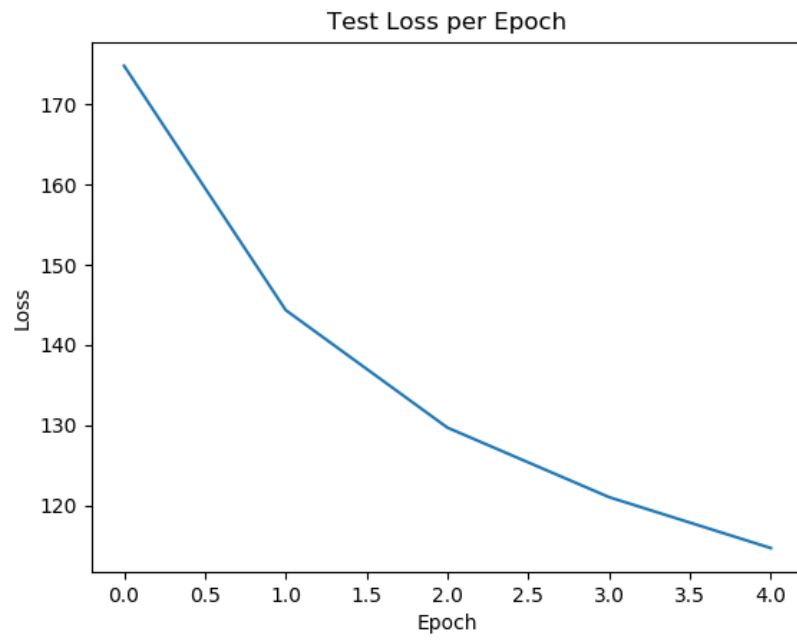


Figure 2: Test Loss

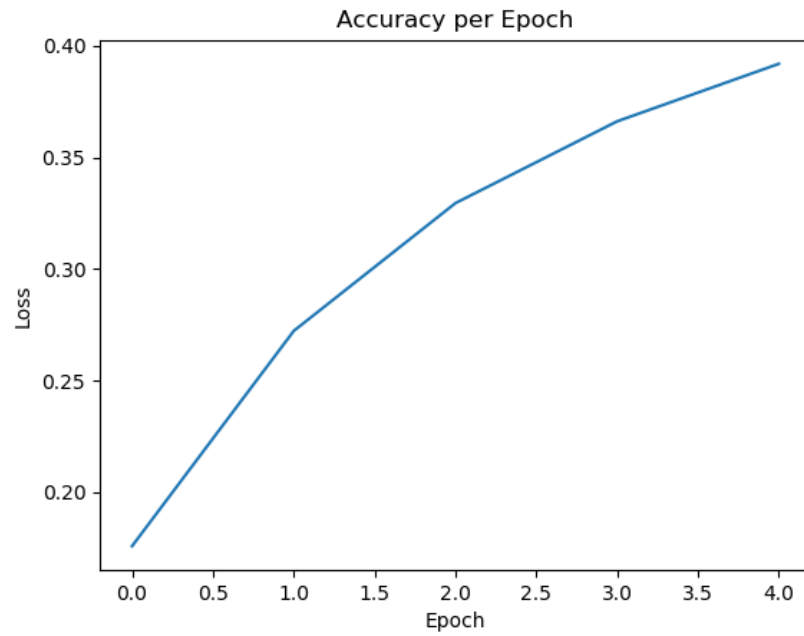


Figure 3: Accuracy

2.2 Results Discussion

We can see that the model has yet to fully converge. With more training, it is likely that the loss will decrease further, with accuracy increasing to about maybe 50%

3 Some Samplings

My personal favourite is

ANDE: I want the Mister Spock.

RILA: I was the control of the control.

We can run sample using the sample.py file

```
python sample.py KSKSKS
```

which will give us a conversation

KIRK: Well, for the ship. I are the parce in the planet of the control of the factors.

SPOCK: Doctor that and be the command of the planet of your ferion can the planet of the fallow the m

KIRK: I was not here.

SPOCK: We'll be so a payn't frroods the ship and a diving the procers to the planet and the corrion c

KIRK: What we can the man any the transporter of the command of the planet. All the proble. We can se

SPOCK: I was live the Captain. The course the all the computer the tall one a little of course.