Homework Assignment

Bookmark this page

Homework Assignment

This homework assignment is based on Lab5_RecurrentNetwork.ipynb notebook.

Before doing this assignment, you should first complete the following tutorial:

- Understanding the Solar Panel Data
- Training and Evaluating a Recurrent Model

Review the notebook and answer the following question.

Question 1

1/1 point (graded)

Which two loss functions / expressions are suitable for predicting the solar panel output?

- [ ] cross entropy
- [x] squared error
- [ ] cosine distance
- [x] absolute error

✔

Submit You have used 1 of 2 attempts

✔ Correct (1/1 point)

Run the notebook and observe the test error. Right now, your average test error hovers around 0.0087 to 0.0091. Let's take this as our baseline and start experimenting.

Important: For the following questions, when asked to "train the model" or "run the notebook", you should re-run your **whole** notebook from the **beginning** so that you are building the model from scratch each time you change a parameter.

Question 2

1/1 point (graded)
Currently, we are using the squared error as the loss function. Experiment with **absolute error** as the loss and error functions. Which of the following is true in comparison with the baseline?

- Using the absolute error as the loss function DECREASES the test error
- Using the absolute error as the loss function INCREASES the test error ✔
- Using the absolute error as the loss function DOES NOT CHANGE the test error

Submit You have used 2 of 2 attempts

✔ Correct (1/1 point)

Once you've finished experimenting with absolute error as the loss function, revert back to the original setting, that is, restore the loss and error functions back to squared error.

Question 3

1/1 point (graded)
Dropout is a powerful tool to control overfitting. Currently, the model has a dropout with 20% probability. Experiment with the following probability: 20%, 50%, and 90%, and observe the trend in the test error. What do you observe (in comparison with the baseline)?

- As the dropout probability INCREASES, the test error DECREASES.
- As the dropout probability INCREASES, the test error INCREASES. ✔

As the dropout probability INCREASES, the test error DOES NOT CHANGE.

Submit You have used 1 of 2 attempts

✔ Correct (1/1 point)

Once you've finished experimenting with the dropout probability, revert back to the original setting, that is, dropout with 20% probability.

Question 4

1/1 point (graded)
The number of hidden dimensions in LSTM is set to 14 in the lab. Experiment with the following hidden dimensions: 7, 14, 28. Which of the setting produces the least test error?

7

14 ✔

28

Submit You have used 1 of 2 attempts

✔ Correct (1/1 point)

Once you've finished experimenting with the hidden dimension, revert back to the original setting, that is, set the hidden dimension back to 14.

Question 5

1/1 point (graded)
You have seen the power of the LSTM cells in your recurrent network. But what if you don't have LSTM cells? Replace the LSTM cells with RNNStep cells, run the notebook to re-train the recurrent network, and observe the test error. Which of the following is true in comparison with the baseline?

- Replacing the LSTM cells with RNNStep cells DECREASES the test error
- Replacing the LSTM cells with RNNStep cells INCREASES the test error ✔
- Replacing the LSTM cells with RNNStep cells DOES NOT CHANGE the test error

Submit You have used 1 of 2 attempts

✔ Correct (1/1 point)

Discussion

Topic: Mod5-3 Tutorials / Homework Assignment

Show Discussion

English