Try again once you are ready

Grade received 70% **Latest Submission Grade** 50% **To pass** 80% or higher

Try again

1. If you have 10,000 examples, how would you split the train/dev/test set? Choose the best option. **0 / 1 point**

- (•) 98% train. 1% dev. 1% test.
- ( ) 60% train. 20% dev. 20% test.
- ( ) 33% train. 33% dev. 33% test.

Expand

Incorrect

No. This might be considered a small data set, not in the range of big data. Thus a more classical (old) best practice should be used.

2. In a personal experiment, an M.L. student decides to not use a test set, only train-dev sets. In this case which of the following is true? **1 / 1 point**

- He won't be able to measure the variance of the model.
- Not having a test set is unacceptable under any circumstance.
- He might be overfitting to the dev set.
- He won't be able to measure the bias of the model.

Expand

Correct

Yes. Although not recommended, if a more accurate measure of the performance is not necessary it is ok to not use a test set. However, this might cause an overfit to the dev set.

3. If your Neural Network model seems to have high variance, what of the following would be promising things to try?

1 / 1 point

- [ ] Make the Neural Network deeper
- [ ] Get more test data
- [x] Get more training data

✓ **Correct**

- [x] Add regularization

✓ **Correct**

- [ ] Increase the number of units in each hidden layer

Expand

Correct
Great, you got all the right answers.

4. You are working on an automated check-out kiosk for a supermarket and are building a classifier for apples, bananas, and oranges. Suppose your classifier obtains a training set error of 19% and a dev set error of 21%. Which of the following are promising things to try to improve your classifier? (Check all that apply, suppose the human error is approximately 0%)

0 / 1 point

- ○ Use a bigger network.
- ○ Get more training data.
- ◉ Increase the regularization parameter lambda.

Expand

Incorrect

No. First, the high bias problem must be addressed.

5. In every case it is a good practice to use dropout when training a deep neural network because it can help to prevent overfitting. True/False?

0 / 1 point

- ○ False

True

Expand

Incorrect

Incorrect. In most cases, it is recommended to not use dropout if there is no overfit. Although in computer vision, due to the nature of the data, it is the default practice.

6. What happens when you increase the regularization hyperparameter lambda? **1 / 1 point**

- Weights are pushed toward becoming smaller (closer to 0)
- Doubling lambda should roughly result in doubling the weights
- Gradient descent taking bigger steps with each iteration (proportional to lambda)
- Weights are pushed toward becoming bigger (further from 0)

Expand

Expand

Correct

7. Which of the following are true about dropout? 0 / 1 point

- [ ] In practice, it eliminates units of each layer with a probability of 1- keep_prob.
- [ ] It helps to reduce the bias of a model.
- [x] In practice, it eliminates units of each layer with a probability of keep_prob.

! **This should not be selected**

Incorrect. The probability that dropout doesn't eliminate a neuron is keep_prob.

- [x] It helps to reduce overfitting.

✓ **Correct**

Correct. The dropout is a regularization technique and thus helps to reduce the overfit.

Expand

Incorrect
You didn't select all the correct answers

8. Increasing the parameter keep_prob from (say) 0.5 to 0.6 will likely cause the following: (Check the two that apply) **1 / 1 point**

- [ ] Increasing the regularization effect
- [x] Reducing the regularization effect

Correct

- [ ] Causing the neural network to end up with a higher training set error
- [x] Causing the neural network to end up with a lower training set error

Correct

Expand

Correct

Great, you got all the right answers.

9. Which of the following actions increase the regularization of a model? (Check all that apply) **1 / 1 point**

- [ ] Increase the value of keep_prob in dropout.
- [x] Make use of data augmentation.

Correct

Correct. Data augmentation has a way to generate "new" data at a relatively low cost. Thus making use of data augmentation can reduce the variance.

- [ ] Decrease the value of the hyperparameter lambda.
- [x] Increase the value of the hyperparameter lambda.

Correct

Correct. When increasing the hyperparameter lambda we increase the effect of the L_2 penalization.

- [ ] Normalizing the data.

Expand

Correct
Great, you got all the right answers.

10. Suppose that a model uses, as one feature, the total number of kilometers walked by a person during a year, and another feature is the height of the person in meters. What is the most likely effect of normalization of the input data?

0 / 1 point

- It won't have any positive or negative effects.
- It will increase the variance of the model.
- It will make the training faster.
- It will make the data easier to visualize.

Expand

Incorrect
Incorrect. Normalization won't affect the variance of the model.