Congratulations! You passed!

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

- 60% train. 20% dev. 20% test.
- 33% train. 33% dev. 33% test.
- 98% train. 1% dev. 1% 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. When designing a neural network to detect if a house cat is present in the picture, 500,000 pictures of cats were taken by their owners. **These are used to make the training, dev and test sets.** It is decided that to increase the size of the test set, 10,000 new images of cats taken from security cameras are going to be used in the test set. Which of the following is true? 1 / 1 point

- This will increase the bias of the model so the new images shouldn't be used.
- This will reduce the bias of the model and help improve it.
- This will be harmful to the project since now dev and test sets have different distributions.

Expand

Correct
Yes. The quality and type of images are quite different thus we can't consider that the dev and the test sets came from the same distribution.

3. If your Neural Network model seems to have high bias, what of the following would be promising things to try? (Check all that apply.) 1 / 1 point

- [x] Make the Neural Network deeper

Correct

- [ ] Get more training data
- [x] Increase the number of units in each hidden layer

Correct

- [ ] Add regularization

Expand

Correct
Great, you got all the right answers.

4. Working on a model to classify bananas and oranges your classifier gets a training set error of 0.1% and a dev set

4. Working on a model to classify bananas and oranges your classifier gets a training set error of 0.1% and a dev set error of 11%. Which of the following two are true? 0 / 1 point

- [ ] The model has a very high bias.
- [ ] The model is overfitting the train set.
- [x] The model has a high variance.

✓ **Correct**
No. This model has a low bias and high variance.

- [x] The model is overfitting the dev set.

! **This should not be selected**
No. This would imply a very low error on the dev set.

Expand

⊗ **Incorrect**
You didn't select all the correct answers

5. Which of the following are regularization techniques? 1 / 1 point

- [ ] Gradient Checking.
- [x] Weight decay.

✓ **Correct**
Correct. Weight decay is a form of regularization.

- [x] Dropout.

✓ **Correct**
Correct. Using dropout layers is a regularization technique.

- [ ] Increase the number of layers of the network.

Expand

✓ **Correct**
Great, you got all the right answers.

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

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

Expand

✓ **Correct**

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

- [x] In practice, it eliminates units of each layer with a probability of 1- keep_prob.

✓ **Correct**

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

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

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

- [ ] It helps to reduce the bias of a model.

Expand

✓ **Correct**
Great, you got all the right 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] Increase the value of the hyperparameter lambda.

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

- [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.

- [ ] Normalizing the data.
- [ ] Decrease the value of the hyperparameter lambda.

Expand

✓ **Correct**
Great, you got all the right answers.

10. Why do we normalize the inputs x? **1 / 1 point**

- ○ Normalization is another word for regularization--It helps to reduce variance
- ○ It makes it easier to visualize the data
- ○ It makes the parameter initialization faster
- ◉ It makes the cost function faster to optimize

Expand

Correct