Congratulations! You passed!

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1. If you have 20,000,000 examples, how would you split the train/dev/test set? Choose the best option. **1 / 1 point**

- (•) 99% train. 0.5% dev. 0.5% test.
- ( ) 90% train. 5% dev. 5% test.
- ( ) 60% train. 20% dev. 20% test.

Expand

Correct
Yes. Given the size of the dataset, 0.5% of the samples are enough to get a good estimate of how well the model is doing.

2. The dev and test set should: **1 / 1 point**

- (•) Come from the same distribution
- ( ) Have the same number of examples
- ( ) Come from different distributions
- ( ) Be identical to each other (same (x,y) pairs)

Expand

Correct

3. If your Neural Network model seems to have high variance, what of the following would be promising things to try? **1 / 1 point**

- [x] Get more training data

Correct

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

Correct

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

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 error of 11%. Which of the following two are true? **1 / 1 point**

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

  ✓ **Correct**
  Yes. This is precisely what happens when overfitting.

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

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

Expand

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

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? **1 / 1 point**

- (•) False
- ( ) True

Expand

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

Expand

✓ **Correct**

7. With the inverted dropout technique, at test time: **1 / 1 point**

- ( ) You do not apply dropout (do not randomly eliminate units), but keep the 1/keep_prob factor in the calculations used in training.
- ( ) You apply dropout (randomly eliminating units) but keep the 1/keep_prob factor in the calculations used in training.
- ( ) You apply dropout (randomly eliminating units) and do not keep the 1/keep_prob factor in the calculations used in training

- (●) You do not apply dropout (do not randomly eliminate units) and do not keep the 1/keep_prob factor in the calculations used in training

Expand

✓ Correct

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) **0 / 1 point**

- [ ] Decrease the value of keep_prob in dropout.
- [ ] Increase the value of keep_prob in dropout.
- [ ] 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.

- [ ] Use Xavier initialization.

Expand

✗ Incorrect
You didn't select all the correct answers

10. Which of the following is the correct expression to normalize the input $\mathbf{x}$? **1 / 1 point**

- ( ) $x = \frac{1}{m}\sum_{i=1}^{m} x^{(i)}$
- (●) $x = \frac{x - \mu}{\sigma}$
- ( ) $x = \frac{x}{\sigma}$
- ( ) $x = \frac{1}{m}\sum_{i=1}^{m} (x^{(i)})^2$

Expand

Correct

Correct. This shifts the mean of the input to the origin and makes the variance one in each coordinate of the input examples.