

1. If you have 10,000,000 examples, how would you split the train/dev/test set?

1 / 1 point

- ☒ 98% train. 1% dev. 1% test
- ☐ 60% train. 20% dev. 20% test
- ☐ 33% train. 33% dev. 33% test

 Expand

 Correct

2. The dev and test set should:

1 / 1 point

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

 Expand

 Correct

0 / 1 point

3. A model developed for a project is presenting high bias. One of the sponsors of the project offers some resources that might help reduce the bias. Which of the following additional resources has a better chance to help reduce the bias?

- ☐ Gather more data for the project.
- ☒ Use different sources to gather data and better test the model.
- ☐ Give access to more computational resources like GPUs.

 Expand

 **Incorrect**

No. More test data won't help reduce the bias.

1 / 1 point

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 0.5%, and a dev set error of 7%. Which of the following are promising things to try to improve your classifier? (Check all that apply.)

☒ Increase the regularization parameter λ

✓ Correct

☐ Decrease the regularization parameter λ

☒ Get more training data

✓ Correct

☐ Use a bigger neural network

5. Which of the following are regularization techniques?

1 / 1 point

☐ Gradient Checking.

☒ Dropout.

✓ **Correct**

Correct. Using dropout layers is a regularization technique.

☐ Increase the number of layers of the network.

☒ Weight decay.

✓ **Correct**

Correct. Weight decay is a form of regularization.

6. The regularization hyperparameter must be set to zero during testing to avoid getting random results. True/False?

1 / 1 point

☒ False

☐ True

 Expand

 **Correct**

Correct. The regularization parameter affects how the weights change during training, this means during backpropagation. It has no effect during the forward propagation that is when predictions for the test are made.

7. Which of the following are true about dropout?

1 / 1 point

☒ It helps to reduce overfitting.

✓ **Correct**

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

☐ In practice, it eliminates units of each layer with a probability of keep_prob.

☒ In practice, it eliminates units of each layer with a probability of $1 - \text{keep_prob}$.

✓ **Correct**

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

☐ It helps to reduce the bias of a model.

1 / 1 point

8. During training a deep neural network that uses the tanh activation function, the value of the gradients is practically zero. Which of the following is most likely to help the vanishing gradient problem?

- ☐ Increase the number of cycles during the training.
- ☐ Increase the number of layers of the network.
- ☐ Use a larger regularization parameter.
- ☒ Use Xavier initialization.

 Expand

 **Correct**

Correct. A careful initialization can help reduce the vanishing gradient problem.

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

0 / 1 point

☐ Normalizing the data.

☒ Increase the value of the hyperparameter lambda.

✓ **Correct**

Correct. When increasing the hyperparameter lambda we increase the effect of the L₂ penalization.

☒ Increase the value of keep_prob in dropout.

! **This should not be selected**

Incorrect. When increasing the keep_prob value the probability that a node gets discarded during training is less thus reducing the regularization effect.

☐ Make use of data augmentation.

☐ Decrease the value of the hyperparameter lambda.

10. Why do we normalize the inputs x ?

1 / 1 point

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

 Expand

☒ Correct