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- 1. Improving Deep Neural Networks: Hyperparameter Tuning, Regularization and Optimization
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Quiz: Practical aspects of Deep Learning

10 questions

- Programming Assignments
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Practical aspects of Deep Learning

Quiz20 minutes • 20 min

Submit your assignment

Due April 18, 1:59 PM +07Apr 18, 1:59 PM +07 **Attempts** 3 every 8 hours

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Practical aspects of Deep Learning

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1.

Question 1

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

1/1 point

0

33% train. 33% dev. 33% test.

◉

60% train. 20% dev. 20% test.

c

98% train. 1% dev. 1% test.

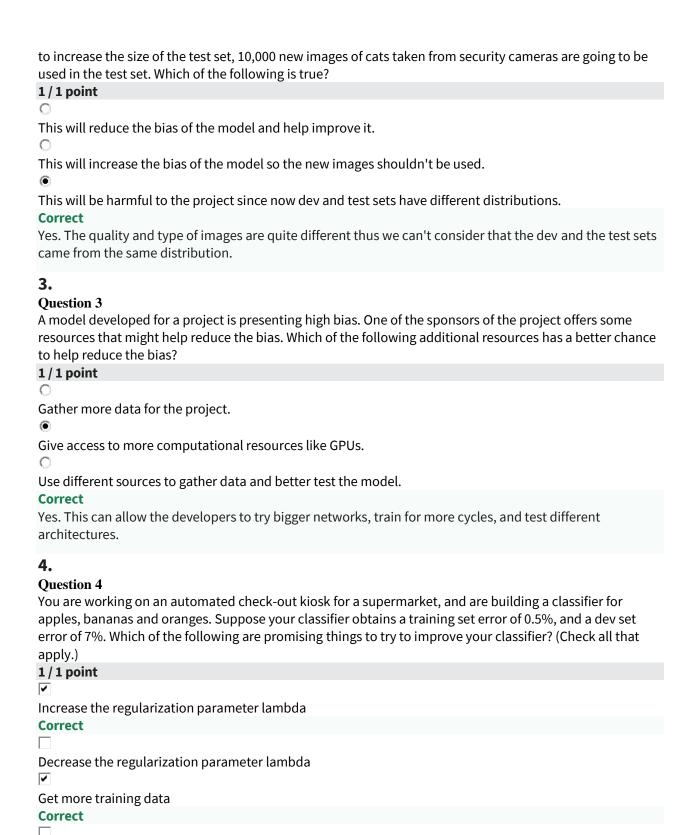
Correct

Yes. 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.

Ouestion 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



5.

Question 5

Use a bigger neural network

| 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 |
| 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. |
| Question 6 |
| To reduce high variance, the regularization hyperparameter lambda must be increased. True/False? |
| 1/1 point |
| |
| True |
| 0 |
| False |
| |
| Correct |
| Correct. By increasing the regularization parameter the magnitude of the weight parameters is reduced. |
| This helps reduce the variance. |
| 7 |
| 7. |
| Question 7 |
| Which of the following are true about dropout? |
| 1/1 point |
| |
| 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- keep_prob. |
| Correct |
| Correct. The probability that dropout doesn't eliminate a neuron is keep_prob. |
| The probability that dropout doesn't eliminate a neuron is keep_prob. |
| |
| It helps to reduce the bias of a model. |
| |
| It helps to reduce overfitting. |
| Correct |
| Correct. The dropout is a regularization technique and thus helps to reduce the overfit. |
| |
| 8. |
| Question 8 |
| Decreasing the parameter keep_prob from (say) 0.6 to 0.4 will likely cause the following: |
| 1/1 point |
| |
| Increasing the regularization effect. |
| |
| Reducing the regularization effect. |
| |

| Causing the neural network to have a higher variance. |
|---|
| Correct Correct. This will make the dropout have a higher probability of eliminating a node in the neural network, increasing the regularization effect. |
| 9. |
| Question 9 |
| Which of the following actions increase the regularization of a model? (Check all that apply) |
| 0.6 / 1 point |
| |
| Increase the value of the hyperparameter lambda. |
| Correct |
| Correct. When increasing the hyperparameter lambda, we increase the effect of the L_2 penalization. |
| Decrease the value of keep_prob in dropout. ✓ |
| Use Xavier initialization. |
| This should not be selected |
| Incorrect. Xavier doesn't have any effect on reducing the variance of the model, thus it's not a |
| regularization technique. |
| |
| Increase the value of keep_prob in dropout. |
| Decrease the value of the hyperparameter lambda. |
| becrease the value of the hyperparameter fambua. |
| 10. |
| Question 10 |
| Why do we normalize the inputs xx? |
| 0 / 1 point |
| |
| Normalization is another word for regularizationIt helps to reduce variance |
| It makes the parameter initialization faster |

 \cap

It makes the cost function faster to optimize

It makes it easier to visualize the data

Incorrect