

Practical aspects of deep learning

9/10 points (90%)

Quiz, 10 questions

✓ Congratulations! You passed![Next Item](#)1 / 1
points

1.

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

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

Correct1 / 1
points

2.

The dev and test set should:

- ☒ Come from the same distribution

Correct

Come from different distributions

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Be identical to each other (same (x,y) pairs)

9/10 points (90%)

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Have the same number of examples



1 / 1
points

3.

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



Make the Neural Network deeper



Un-selected is correct



Get more training data



Correct



Increase the number of units in each hidden layer



Un-selected is correct



Get more test data



Un-selected is correct



Add regularization



Correct



1 / 1
points

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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



Un-selected is correct

☐

Get more training data



Correct

☐

Use a bigger neural network



Un-selected is correct



1 / 1
points

5.

What is weight decay?

☐

The process of gradually decreasing the learning rate during training.

☐

Gradual corruption of the weights in the neural network if it is trained on noisy data.

☒

A regularization technique (such as L2 regularization) that results in gradient descent shrinking the weights on every iteration.



Correct

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1 / 1
points

6.

What happens when you increase the regularization hyperparameter λ ?



Weights are pushed toward becoming smaller (closer to 0)

**Correct**

Weights are pushed toward becoming bigger (further from 0)



Doubling λ should roughly result in doubling the weights



Gradient descent taking bigger steps with each iteration (proportional to λ)

0 / 1
points

7.

With the inverted dropout technique, at test time:



You apply dropout (randomly eliminating units) and do not keep the $1/\text{keep_prob}$ factor in the calculations used in training



You do not apply dropout (do not randomly eliminate units), but keep the $1/\text{keep_prob}$ factor in the calculations used in training.



You do not apply dropout (do not randomly eliminate units) and do not keep the $1/\text{keep_prob}$ factor in the calculations used in training



You apply dropout (randomly eliminating units) but keep the $1/\text{keep_prob}$ factor in the calculations used in training.

**This should not be selected**

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1 / 1
points

8.

Increasing the parameter `keep_prob` from (say) 0.5 to 0.6 will likely cause the following: (Check the two that apply)

☐

Increasing the regularization effect

**Un-selected is correct**☐

Reducing the regularization effect

**Correct**☐

Causing the neural network to end up with a higher training set error

**Un-selected is correct**☐

Causing the neural network to end up with a lower training set error

**Correct**1 / 1
points

9.

Which of these techniques are useful for reducing variance (reducing overfitting)? (Check all that apply.)

☐

Vanishing gradient

**Un-selected is correct**



Data augmentation

**Correct**

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L2 regularization

**Correct**

Xavier initialization

**Un-selected is correct**

Exploding gradient

**Un-selected is correct**

Dropout

**Correct**

Gradient Checking

**Un-selected is correct**1 / 1
points

10.

Why do we normalize the inputs x ?

It makes the parameter initialization faster



Normalization is another word for regularization--It helps to reduce variance



It makes the cost function faster to optimize