

Practical aspects of deep learning

10/10 points (100%)

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?



33% train . 33% dev . 33% test



60% train . 20% dev . 20% test



98% train . 1% dev . 1% test

**Correct**1 / 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)

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Have the same number of examples



1 / 1
points

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.)



Get more training data



Un-selected is correct



Add regularization



Un-selected is correct



Increase the number of units in each hidden layer



Correct



Get more test data



Un-selected is correct



Make the Neural Network deeper



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.)

10/10 points (100%)

☐

Increase the regularization parameter lambda



Correct

☐

Decrease the regularization parameter lambda



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.

☐

A technique to avoid vanishing gradient by imposing a ceiling on the values of the weights.

☒

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



Correct



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

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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)



1 / 1
points

7.

With the inverted dropout technique, at test time:



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



Correct



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 apply dropout (randomly eliminating 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.

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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

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Dropout

**Correct**

Gradient Checking

**Un-selected is correct**

Data augmentation

**Correct**

Xavier initialization

**Un-selected is correct**

Exploding gradient

**Un-selected is correct**

L2 regularization

**Correct**1 / 1
points

10.

Why do we normalize the inputs x ?

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



It makes the parameter initialization faster

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It makes the cost function faster to optimize



Correct

