

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?

- ☐ 60% train . 20% dev . 20% test
- ☐ 33% train . 33% dev . 33% 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
- ☐ Be identical to each other (same (x,y) pairs)

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Have the same number of examples

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points

3.

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

☐

Get more training data



Correct

☐

Add regularization



Correct

☐

Make the Neural Network deeper



Un-selected is correct

☐

Increase the number of units in each hidden layer



Un-selected is correct

☐

Get more test data



Un-selected is correct



1 / 1
points

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 lambda



Correct

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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?



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



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.



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points

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6.

What happens when you increase the regularization hyperparameter lambda?



Weights are pushed toward becoming smaller (closer to 0)



Correct



Weights are pushed toward becoming bigger (further from 0)



Doubling lambda should roughly result in doubling the weights



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



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points

7.

With the inverted dropout technique, at test time:



You apply dropout (randomly eliminating 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



Correct



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.



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points

8.

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



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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.)



Dropout

Correct



Data augmentation

Correct



L2 regularization

Correct



Xavier initialization

Un-selected is correct

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Gradient Checking

Un-selected is correct



Vanishing gradient

Un-selected is correct



Exploding gradient

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 it easier to visualize the data



It makes the cost function faster to optimize

Correct



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