Practical aspects of deep learning

10/10 points (100.00%)

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

Correct

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

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)

Have the same number of examples

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✔ 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 test data

Un-selected is correct

☐ Get more training data

Un-selected is correct

☐ Make the Neural Network deeper

Correct

☐ Add regularization

Un-selected is correct

☐ Increase the number of units in each hidden layer

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?

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

Correct

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

○ 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.

✔ 1 / 1 points

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6.

What happens when you increase the regularization hyperparameter lambda?

- [x] 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)

1 / 1 points

7.

With the inverted dropout technique, at test time:

- [ ] You apply dropout (randomly eliminating units) and do not keep the 1/keep_prob factor in the calculations used in training
- [ ] You do not apply dropout (do not randomly eliminate units), but keep the 1/keep_prob factor in the calculations used in training.
- [ ] You apply dropout (randomly eliminating units) but keep the 1/keep_prob factor in the calculations used in training.
- [x] You do not apply dropout (do not randomly eliminate units) and do not keep the 1/keep_prob factor in the calculations used in training

Correct

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

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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

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1 / 1 points

9.
Which of these techniques are useful for reducing variance (reducing overfitting)? (Check all that apply.)

Exploding gradient

Un-selected is correct

L2 regularization

Correct

Dropout

Correct

Xavier initialization

Un-selected is correct

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- [x] Data augmentation

Correct

- [x] Gradient Checking

Un-selected is correct

- [x] Vanishing 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 the cost function faster to optimize

Correct

- ○ It makes it easier to visualize the data

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