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?

- ◉ 98% train . 1% dev . 1% test

Correct

- ○ 33% train . 33% dev . 33% test
- ○ 60% train . 20% dev . 20% 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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0 / 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

Make the Neural Network deeper

This should be selected

Get more training data

This should not be selected

Increase the number of units in each hidden layer

This should be selected

Add regularization

This should not be selected

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 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?

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

The process of gradually decreasing the learning rate during training

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✔ 1 / 1 points

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)

✔ 1 / 1 points

7.
With the inverted dropout technique, at test time:

- 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.
- 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) and do not keep the 1/keep_prob factor in the calculations used in training

Correct

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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)

- [x] Increasing the regularization effect

Un-selected is correct

- [x] Reducing the regularization effect

Correct

- [x] Causing the neural network to end up with a higher training set error

Un-selected is correct

- [x] 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.)

- [x] Vanishing gradient

Un-selected is correct

Xavier initialization

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Un-selected is correct

Exploding gradient

Un-selected is correct

Gradient Checking

Un-selected is correct

Dropout

Correct

L2 regularization

Correct

Data augmentation

Correct

1 / 1 points

10.

Why do we normalize the inputs $$x$$?

It makes the cost function faster to optimize

Correct

It makes the parameter initialization faster