Practical aspects of deep learning

Quiz, 10 questions

Congratulations! You passed!

Next Item

1 / 1 point

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 point

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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3.

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

- [ ] Get more test data

Un-selected is correct

- [ ] 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

- [ ] Add regularization

Correct

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1 / 1 point

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

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- [x] Get more training data

Correct

- [x] Use a bigger neural network

Un-selected is correct

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1 / 1 point

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.
- [x] 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.

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1 / 1 point

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)

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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/keep_prob factor in the calculations used in training

Correct

- 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.

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1 / 1 point

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

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1 / 1 point

9.

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

- [x] Dropout

Correct

- [x] Data augmentation

Correct

- [x] Vanishing gradient

Un-selected is correct

- [x] Exploding gradient

Un-selected is correct

- [x] Xavier initialization

Un-selected is correct

- [x] L2 regularization

Correct

- [x] Gradient Checking

Un-selected is correct

1 / 1 point

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

It makes it easier to visualize the data