deeplearning.ai

Machine Learning Engineers Test - (1h45)

06m
to test end

☆ Normal distribution plots

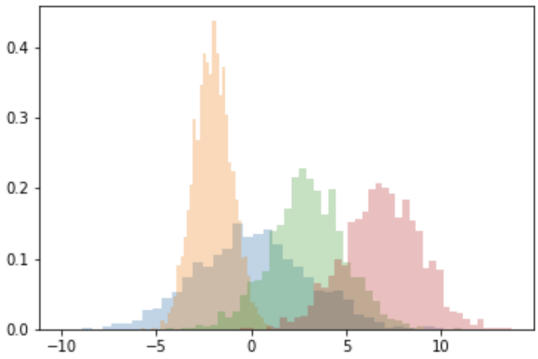
Given the following code snippet:

```
distribution1 = np.random.normal(0.1,3,2000)
distribution2 = np.random.normal(-2,1,2000)
distribution3 = np.random.normal(3,2,2000)
distribution4 = np.random.normal(7,2,2000)

kwargs = dict(histtype='stepfilled', alpha = 0.3, normed = True, bins =
40)

plt.hist(distribution1, **kwargs)
plt.hist(distribution2, **kwargs)
plt.hist(distribution3, **kwargs)
plt.hist(distribution4, **kwargs)
```

Which colour does **distribution1** correspond to?



Pick one of the choices

- Orange
- Green
- Blue
- Red

Clear selection

Mathematics (Algorithms, Probabilities & Statistics)

57 58 59 60 61 62 63 64 65 66 67 68 69 70

☆ Binary search algorithm

32 football players have been nominated for the best player of the year award. Assuming the lowercase players' names are arranged in a sorted list (in alphabetical order, from 'a' to 'z'). In the worst case, how many names would a binary search algorithm look at to find the location of a player's name in the list?

Pick one of the choices

- 1
- 4
- 5
- 7
- 9
- 12
- 16
- 32

Clear selection

☆ Sort algorithms for nearly sorted lists

Consider a nearly sorted list. What is the best algorithm to sort this list?

Pick one of the choices

- Insertion sot
- Heap sort
- Merge sort
- Quick sort

Clear selection

☆ Breadth First Search

Which of the following proposals correctly describes Breadth First Search (BFS)? (Check all that apply.)

Pick one of the choices

- BFS keeps searching along a certain path until it needs to backtrack. Finding the shortest path is not guaranteed.
- BFS looks at paths containing the neighbors 1 step away from the initial node, then neighbors 2 steps away, and so on... until a path between the initial node and the end node is found. Finding the shortest path is guaranteed.
- BFS assigns some initial distance values between the starting node and other nodes in the graph, and will try to improve them step by step.
- BFS is a greedy algorithm, and always takes the path that is best at a given time.
- BFS uses a heuristic when deciding which path to take. For example, in the case of a street map, the direction between the starting point and ending point can be the heuristic.

Clear selection

☆ Dartboard game analysis

A dart is thrown at a circular dartboard such that it will land randomly over the area of the dartboard. What is the probability that it lands closer to the center than to the edge? Assume the dart always reaches the dartboard.

Pick one of the choices

- 25%
- 50%
- 10%
- 33%

Clear selection

☆ Find missing number

You have a sequence of numbers sorted from 1 to n, but one of the numbers is missing. What's the runtime of the fastest algorithm that always finds the missing number?

Pick one of the choices

- O(log(n))
- O(n)
- O(1)
- O(nlog(n))

Clear selection

☆ Random Variables

You want to initialize the parameters of a fully-connected layer with a Gaussian random initialization of mean 0 and variance of 25.

Which of the following commands achieves this?

Pick one of the choices

```
init = np.random.uniform()
init = 5*init
```

```
init = np.random.randn()
init = 5*init
```

```
init = np.random.randn()
init = 25*init
```

```
init = np.random.uniform()
init = 25*init
```

Clear selection

☆ Stats in Cards

You draw one card from a standard deck of 52 playing cards (2 colours, 4 suits and 13 cards per suit). Which one of the following pair of events is independent?

Pick the correct choices

- The first card is a heart and the second card is a heart
- The first card is a heart and the second card is red
- The first card is a heart and the second card is an ace
- The first card is red and the second card is a diamond

Clear selection

☆ Balls in Bags

Bag I contains 4 white and 6 black balls while another Bag II contains 4 white and 3 black balls. One ball is drawn at random from one of the bags and it is found to be black. Find the probability that it was drawn from Bag I.

Pick one of the choices

- 4/6
- 7/12
- 2/6
- 5/12

Clear selection

☆ Dices and Bags

I have three bags that each contain 100 dices:

- Bag 1 has 75 red and 25 blue dices;
- Bag 2 has 60 red and 40 blue dices;
- Bag 3 has 45 red and 55 blue dices.

I choose one of the bags at random and then pick a dice from the chosen bag, also at random. What is the probability that the chosen dice is red?

Pick one of the choices

- 0.55
- 0.6
- 0.7
- 0.65

Clear selection

Continue