

很多不確定.....



Question **1**

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1.00

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question

We want to model the color distribution of an RGB image using histograms. There are two options:

- A single 3D histogram of shape $N \times N \times N$, where a bin with index (i, j, k) represents the proportion of pixels which fall in the i th bin of R, in the j th bin of G **and** in the k th bin of B.
- Three separate 1D histograms, where e.g. for the first histogram a bin with index i represents the proportion of pixels which fall in the i th bin of R.

Which of the following statements is true?

- ☒ a. The 3D histogram represents more information about the image than the three separate histograms.
- ☐ b. The 3D histogram represents less information about the image than the three separate histograms.
- ☐ c. Both types of histograms represent the same amount of information.

[Clear my choice](#)

Question **2**

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In the exercise on graph cut segmentation, we use a default weight for the pairwise potential of 5. Select the description which best matches the output you see.

Pairwise weight of 1.

The segmentation is more noisy compared to a weight of 5.

Pairwise weight of 10.

The area classified as the foreground is connected, a few (3-5) petals are partly classified as background. 

Pairwise weight of 100.

The classification is cut off at most petal tips with a straight edge. 

Pairwise weight of 1000.

Nothing is classified as foreground. 

Quiz navigation



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Question **3**

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question

We applied mean-shift clustering to a 3D Gaussian mixture in the exercise. After the naive `mean_shift` algorithm we implemented two optimizations `mean_shift_opt` and `mean_shift_opt2`.

Select the correct radius for each of the following questions.

Slowest with `mean_shift_opt2`.

Radius 1 ⚡

Best result with `mean_shift_opt2`.

Radius 2 ⚡

Fastest with `mean_shift_opt`.

Radius 1 ⚡

About 8 clusters with `mean_shift`.

Radius 1.25 ⚡

Question **4**

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question

We apply the mean-shift clustering on image data to segment the image. What effects do the following parameter changes usually have on the number of clusters, if all other parameters stay the same?

Increase the weight of the position features.

Number of clusters increases.



Increase the radius of mean-shift clustering.

Number of clusters decreases.



Use color features and position features (5D) instead of color features alone (3D).

Number of clusters increases.



Apply the segmentation on a larger image.

Number of clusters increases.



Question **5**

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question

We train a HOG-detector in the exercise. Select whether the following properties are true or false for this detector.

The detector is invariant to rotation, i.e. it can detect rotated cars as well.

False 

The detector is invariant to scaling, it can detect cars of arbitrary size.

False 

The detector detects all cars of the test dataset.

False 

The detector is invariant to translation, it does not matter where in the image the car is.

True 

To detect cars in an image, the SVM has to be applied multiple times.

True 

The detector can detect multiple cars in one image.

True 

In []: