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State Finished

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Time taken 18 mins 15 secs

Grade 1.17 out of 10.00 (12%)

Question **1**

Partially correct

Mark 0.67 out of 4.00

Which of the following statements are true regarding the VLAD descriptor of an image

- ☒ a. The dimensionality of VLAD descriptor is the product of dimensionality of the local descriptor and the vocabulary size (assuming we represent the residuals for each visual word in the vocabulary) ✓
- ☒ b. During classification/retrieval, the VLAD descriptor computes a vector corresponding each visual word in the query image by aggregating the difference between the local descriptors in the image and the corresponding visual words. ✓
- ☐ c. The dimensionality of VLAD descriptor of an image is independent of the dimensionality of the local descriptor (e.g., SIFT)
- ☒ d. During training, the BoVW computes visual words are scalars, which VLAD computes them as vectors ✗
- ☐ e. The training phase and the computation of visual words in BoVW and VLAD are identical

Your answer is partially correct.

You have correctly selected 2.

The correct answers are:

The training phase and the computation of visual words in BoVW and VLAD are identical,

The dimensionality of VLAD descriptor is the product of dimensionality of the local descriptor and the vocabulary size (assuming we represent the residuals for each visual word in the vocabulary),

During classification/retrieval, the VLAD descriptor computes a vector corresponding each visual word in the query image by aggregating the difference between the local descriptors in the image and the corresponding visual words.

Question 2

Partially correct

Mark 0.50 out of 3.00

Which of the following statements are true about the Bag of Visual Words (BoVW) representation of an image?

- ☐ a. The Bag of Visual Words representation captures the spatial distribution of contents in an image
- ☐ b. The dimensionality of BoVW representation of an image is independent of both the dimensionality of the local descriptor (e.g., SIFT) and the number of visual words in an image
- ☒ c. The dimensionality of the BoVW is given by the product of the dimensionality of the local descriptor and the vocabulary size ✗
- ☐ d. None of the others
- ☒ e. The visual words are formed by clustering local feature representations ✓

Your answer is partially correct.

You have correctly selected 1.

The correct answers are:

The visual words are formed by clustering local feature representations,

The dimensionality of BoVW representation of an image is independent of both the dimensionality of the local descriptor (e.g., SIFT) and the number of visual words in an image

Question 3

Incorrect

Mark 0.00 out of 3.00

Which of the following statements are true regarding the inverted index in the context of BoVW based retrieval

- ☐ a. Inverted index is used to increase the ACCURACY of matching visual words in the query image to those in the database
- ☐ b. Given that each visual word is present in a maximum of K images in the dataset, the efficiency of inverted index based retrieval WILL NOT decrease with increasing database size.
- ☐ c. Inverted index stores the list of images for each visual word
- ☒ d. Inverted index is used to increase the EFFICIENCY of finding images that match a particular visual word ✓
- ☒ e. Inverted index stores the list of visual words for each image. ✗

Your answer is incorrect.

The correct answers are:

Inverted index stores the list of images for each visual word,

Inverted index is used to increase the EFFICIENCY of finding images that match a particular visual word, Given that each visual word is present in a maximum of K images in the dataset, the efficiency of inverted index based retrieval WILL NOT decrease with increasing database size.

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