Feature extraction from text and images
Graded Quiz • 8 min

QUIZ • 8 MIN

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TOTAL POINTS 6

1. Select true statements about n-grams   (2 points)

- [ ] N-grams can help utilize local context around each word
- [ ] N-grams always help increase significance of important words
- [ ] Levenshteining should always be applied before computing n-grams
- [ ] N-grams features are typically sparse

2. Select true statements.   (1 point)

- [ ] You do not need bag of words features in a competition if you have word2vec features.
- [ ] Bag of words usually produces longer vectors than Word2vec
- [ ] Meaning of each value in BOW matrix is unknown.
- [ ] Semantically similar words usually have similar word2vec embeddings.

3. Suppose in a new competition we are given a dataset of 2D medical images. We want to extract image descriptors from a hidden layer of a neural network pretrained on the ImageNet dataset. We will then use extracted descriptors to train a simple logistic regression model to classify images from our dataset.

We consider to use two networks: ResNet-50 with imagenet accuracy of X and VGG-16 with ImageNet accuracy of Y (X < Y). Select true statements.   (2 points)

- [ ] For any image descriptors from the last hidden layer of ResNet-60 are the same as the descriptors from the last hidden layer of VGG-16.
- [ ] Descriptors from ResNet-60 and from VGG-16 are always very similar in cosine distance.
- [ ] Descriptors from ResNet-50 will always be better than the ones from VGG-16 in our pipeline.
- [ ] With one pretrained CNN model you can get only one vector of descriptors for an image.
- [ ] It is not clear what descriptors are better on our dataset. We should evaluate both.

4. Data augmentation can be used at (1) train time (2) test time   (1 point)

- ( ) False, True
- ( ) False, False
- ( ) True, True
- ( ) True, False

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