You are currently viewing Archive 2022 Site

ECS763U/ECS763P - Natural Language Processing - 2022/23 - Semester 1

Started on	Wednesday, 26 October 2022, 11:57 AM
State	Finished
Completed on	Wednesday, 26 October 2022, 12:38 PM
Time taken	40 mins 38 secs
Grade	**9.00** out of 10.00 (**90**%)

Quiz navigation

1 2 3 4 5 6 7 8 9 10

Show one page at a time

Finish review

Question **1**
Correct
Mark 1.00 out of 1.00
Flag question

For bag-of-words feature representations, their corresponding feature vectors for natural language texts are usually:

a. dense
b. sparse ✔

The correct answer is: sparse

Question **2**
Correct
Mark 1.00 out of 1.00
Flag question

When turning the features for an instance of data, as a pair of attributes and values, into a vector, the basis (positions) of feature values in each vector:

a. must be the same each time and correspond to the same feature each time ✔
b. can be different and the position in the vector doesn't matter

The correct answer is: must be the same each time and correspond to the same feature each time

Question **3**
Incorrect
Mark 0.00 out of 1.00
Flag question

It is always necessary to make words lower-case in English texts for better text classification results.

Select one:
- True ✘
- False

The correct answer is 'False'.

Question **4**
Correct
Mark 1.00 out of 1.00
Flag question

It is generally a good idea to avoid too a high dimensional feature set which could force the model to ' memorise' the training data.

Select one:
- True ✔
- False

The correct answer is 'True'.

Question **5**
Correct
Mark 1.00 out of 1.00
Flag question

A support vector machine (SVM) model is:

a. A linear classifier ✔
b. A non-linear classifier

The correct answer is: A linear classifier

Question **6**
Correct
Mark 1.00 out of 1.00
Flag question

Lower entropy in a distribution of a random variable means there is _____ over the likely value of that variable.

a. greater uncertainty
b. less uncertainty ✔

The correct answer is: less uncertainty

Question **7**
Correct
Mark 1.00 out of 1.00
Flag question

Which of the following are measures of the utility of a feature which can be used in feature selection for a text classifier?

a. Loss curve
b. Gradient Descent
c. Pointwise Mutual Information ✔
d. Bias vector
e. Chi squared ✔
f. Information Gain ✔

Your answer is correct.

The correct answers are: Pointwise Mutual Information,
Information Gain,
Chi squared

Question **8**
Correct
Mark 1.00 out of 1.00
Flag question

Which of the following is true?

Select one:
a. Naive Bayes and SVM classifiers are both discriminative classifiers.
b. Naive Bayes is a discriminative classifier and an SVM classifier is a generative classifier.
c. Naive Bayes and SVM classifiers are both generative classifiers.
d. Naive Bayes is a generative classifier and an SVM classifier is a discriminative classifier. ✔
e. Neither Naive Bayes or SVM classifiers are generative classifiers.

The correct answer is: Naive Bayes is a generative classifier and an SVM classifier is a discriminative classifier.

Question **9**
Correct
Mark 1.00 out of 1.00
Flag question

Give, to the nearest **2 Decimal Places**, the probability a logistic regression classifier would give the negative class for a model with the weights w and bias b shown below, when the input vector x as shown below is input to the model. The definition for the Z activation is given below, along with the probability of the negative class Y=0 in terms of the sigmoid function on Z.

- Sentiment analysis (positive + Y=1 vs - negative Y=0)
- Model weights after training: w = [-2, 0.2, -0.1, 3] and b = 0.3
- 2 step probability calculation:

$$Z = (\sum_{i=1}^{n} w_i x_i) + b$$

$$p(Y=0) = 1 - \sigma(Z)$$

- What's the likelihood of Y=0 for input x = [3, 1, 1, 1] ?:

Answer: 0.93 ✔

The correct answer is: 0.93

Question **10**
Correct
Mark 1.00 out of 1.00
Flag question

Give, to the nearest **2 Decimal Places**, the probability a logistic regression classifier would give the negative class for a model with the weights w and bias b shown below, when the input vector x as shown below is input to the model. The definition for the Z activation is given below, along with the probability of the negative class Y=0 in terms of the sigmoid function on Z.

- Sentiment analysis (positive + Y=1 vs - negative Y=0)
- Model weights after training: w = [0.1, 0.2, 5, -1] and b = 0.1
- 2 step probability calculation:

$$Z = (\sum_{i=1}^{n} w_i x_i) + b$$

$$p(Y=0) = 1 - \sigma(Z)$$

- What's the likelihood of Y=0 for input x = [5, 5, 1, 4] ?:

Answer: 0.07 ✔

The correct answer is: 0.07

Finish review

◀ Lecture live Zoom link for remote participants

Jump to...

Programming Assignment 1: Text Classification for Fake News Detection (worth 40% of overall mark) ▶

©2022 Queen Mary University of London