Feature Selection Quiz

Due No due date **Points** 4 **Questions** 4 **Available** after Mar 23 at 0:00
Time Limit None **Allowed Attempts** Unlimited

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Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	less than 1 minute	0 out of 4

Submitted Jun 16 at 18:19

Unanswered

Question 1

0 / 1 pts

In order to have an accurate model, the features should be ……. as much as possible and the class label should be …… to the features.

Correct Answer

- uncorrelated– correlated
- correlated– correlated
- uncorrelated– uncorrelated
- correlated– uncorrelated

When the features are uncorrelated and independent, they can provide more information. Ideally the class label should be highly correlated to the features, so that the features can be predictive.

Unanswered

Question 2

0 / 1 pts

Using full Wrapper method, the best model with 4 features always contains the set of features involved in the best model with 3 features.

- True
- False

orrect Answer

Using full Wrapper method, it compares all combinations of features, and the best model with 4 features may not contain the set of features involved in the best model with 3 features. For example, two features working well together may be selected in 4-feature model, which replaces a certain feature in the best model with 3 features. However, for greedy approach wrapper, this statement is true, because greedy approach adds feature incrementally.

Cancel Update Question

Unanswered

Question 3

0 / 1 pts

Which one of the following choices is an ideal value for PMI between the feature and the class?

- 1

orrect Answer

- $+\infty$
- $+\epsilon$ (a very small positive value)
- 0

PMI is defined as log (P(a, b)/P(a)P(b)), which can be converted to log (P(a|b)/P(a)). In the ideal case, the input and the output are highly correlated, so that P(a|b) $\approx$1, and when P(a) is a small probability value, in theory PMI can go to infinity.

Unanswered

Question 4

0 / 1 pts

Which of the following method does not belong to the feature selection approaches?

- Using a Greedy method to pick up the most predictive features.
- Feature filtering methods.

orrect Answer

- Projecting features to a lower dimensional space using PCA.
- Using the full wrapper technique to find the best subset of input features.

PCA uses a projection technique which uses the combination of all the features to define new features, in a lower dimensional space. It's a feature reduction approach which tries to map the benefits of all features in smaller but new features. The other items are all feature selection strategies.