

# CS7641 ML Practice Quiz

## Module RL 3: Feature Selection

Created by Kyle Nakamura with the help of ChatGPT

### Question 1

What are the primary reasons for performing feature selection in machine learning?

- A. To improve model interpretability.
- B. To reduce computational complexity.
- C. To increase the accuracy of the model.
- D. To handle the curse of dimensionality.

### Question 2

In the context of feature selection, what is the difference between filtering and wrapping methods?

- A. Filtering methods are faster but may ignore the learning bias.
- B. Wrapping methods take into account the model bias and are more thorough.
- C. Filtering methods rely on external criteria for feature evaluation.
- D. Wrapping methods ignore the learning problem.

### Question 3

Which of the following are criteria that can be used in filtering methods for feature selection?

- A. Information gain.
- B. Variance.
- C. Entropy.
- D. Model accuracy.

#### Question 4

What is the significance of "strongly relevant" and "weakly relevant" features in feature selection?

- A. Strongly relevant features degrade the Bayes Optimal Classifier if removed.
- B. Weakly relevant features are indispensable for the classifier.
- C. Strongly relevant features are always necessary for model accuracy.
- D. Weakly relevant features improve the classifier only in the presence of certain other features.

#### Question 5

Which of the following statements are true regarding relevance and usefulness of features in feature selection?

- A. Relevance is about the effect on the Bayes Optimal Classifier.
- B. Usefulness is about minimizing error for a specific model.
- C. A feature can be irrelevant but still be useful for certain algorithms.
- D. Usefulness of a feature is determined by its information content

## Answer key

1. A, B, D
2. A, B, C
3. A, B, C
4. A, D
5. A, B, C