Your grade: 100%

Your latest: **100%** • Your highest: **100%** • To pass you need at least 70%. We keep your highest score.

Next item →

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1. In K-fold cross-validation, how will increasing k affect the variance (across subsamples) of estimated model parameters?

   ○ Increasing k will not affect the variance of estimated parameters.

   ○ Increasing k will usually reduce the variance of estimated parameters.

   ◉ Increasing k will usually increase the variance of estimated parameters.

   ○ Increasing k will increase the variance of estimated parameters if models are underfit, but reduce it if models are overfit.

   1 / 1 point

   ✓ **Correct**
   Correct! You can find more information in the cross-validation lessons.

2. Which statement about K-fold cross-validation below is TRUE?

   ○ Each subsample in K-fold cross-validation has at least k observations.

   ○ Each of the k subsamples in K-fold cross-validation is used as a training set.

   ◉ Each of the k subsamples in K-fold cross-validation is used as a test set.

   ○ None of the above

   1 / 1 point

   ✓ **Correct**
   Correct! You can find more information in the cross-validation lessons.

3. If a low-complexity model is underfitting during estimation, which of the following is MOST LIKELY true (holding the model constant) about K-fold cross-validation?

   ◉ Assuming there is enough training data the number of folds in K-fold validation does not inherently result in underfitting.

   ○ K-cross-validation with a small k will reduce or eliminate underfitting.

   ○ K-fold cross-validation with a large k will reduce or eliminate underfitting.

   ○ None of the above.

   1 / 1 point

   ✓ **Correct**
   Correct! You can find more information in the cross-validation lessons.

4. Which of the following statements about a high-complexity model in a linear regression setting is TRUE?

   ○ Cross-validation with a small k will reduce or eliminate overfitting.

   ◉ A high variance of parameter estimates across cross-validation subsamples indicates likely overfitting.

   ○ A low variance of parameter estimates across cross-validation subsamples indicates likely overfitting.

   ○ Cross-validation with a large k will reduce or eliminate overfitting.

   1 / 1 point

   ✓ **Correct**
   Correct! You can find more information in the cross-validation lessons.

5. Reviewing the below graph, what is the model considered when associated with the left side of this curve before hitting the plateau?
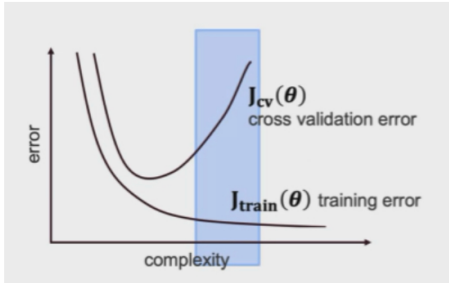
   1 / 1 point

complexity
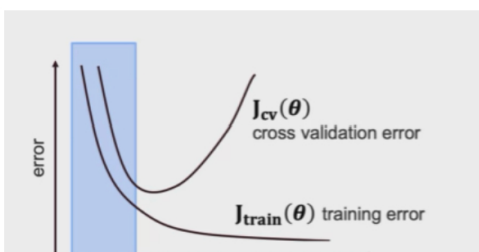
○ Overfitting

○ Linear regression

○ Cross validation error

◉ Underfitting

✓ **Correct**
Correct! Models associated with the left side of this curve before hitting the plateau are considered underfitting. Which means the training and cross validation errors are both very high.

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6. Reviewing the below graph, what is the model considered when associated with the right side of the cross validation error?   **1 / 1 point**

◉ Overfitting

○ Polynomial regression

○ Training error

○ Underfitting

✓ **Correct**
Correct! Models associated with the right side of the cross validation error are considered overfitting. Which means the training error is low and the cross validation is high.

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7. Which of the following functions perform K-fold cross-validation for us, appropriately fitting and transforming at every step of the way?   **1 / 1 point**

○ 'cross_val'

○ 'cross_validation'

○ 'cross_validation_predict'

◉ 'cross_val_predict'

✓ **Correct**
Correct! You can find more information in the Cross Validation Demo videos.

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8. Which of the following statements about cross-validation is/are True?   **1 / 1 point**

○ Cross-validation is essential step in hyperparameter tuning.

○ We can manually generate folds by using KFold function.

○ GridSearchCV is commontly used in cross-validation.

◉ All of the above are True.

✓ **Correct**
Correct! You can find more information in the Cross Validation Demo videos.

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9. Which of the following statements about GridSearchCV is/are True?   **1 / 1 point**

○ GridSearchCV scans over a dictionary of parameters.

○ GridSearchCV finds the hyperparameter set that has the best out-of-sample score.

○ GridSearchCV retrains on all data with the "best" hyper-parameters.

◉ All of the above are True.

> ⊘ **Correct**
> Correct! You can find more information in the Cross Validation Demo videos.

10. Which of the below functions, randomly selects data to be in the train/test folds?   1 / 1 point

○ `StratifiedKFold`

○ `GroupKFold`

◉ 'KFold' and `StratifiedKFold`

○ 'KFold'

> ⊘ **Correct**
> Correct! You can find more information in the Cross Validation Demo videos.