


# 11.4: Cross-Validation

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Read from the beginning of Section 5 up to Section 5.1.4 of *An Introduction to Statistical Learning, with Applications in R*. As you read, take notes on the following.

- 1
- Using your own words, describe the steps taken in the validation set approach.
- 2
- Using your own words, describe the steps taken in Leave-One-Out Cross-Validation (LOOCV).
- 3
- What are the advantages of LOOCV over the validation set approach?
- 4
- Using your own words, describe the steps taken in *k*-Fold Cross-Validation.
- 5
- How is LOOCV a special case of *k*-Fold Cross-Validation?
- 6
- Comment on the bias-variance tradeoff between LOOCV and k-Fold Cross-Validation.

Refer to the file below for an explanation of the mean-squared error and how it relates to the bias and variance of an estimator.

 mod11\_mse.pdf

Mean-Squared Error