



Quiz 1



5/5 questions correct

Quiz passed!

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1.

Which of the following are components in building a machine learning algorithm?

☐

Machine learning

Well done!

☐

Training and test sets

Well done!

☒

Creating features.

Well done!

☐

Artificial intelligence

Well done!

☐ Statistical inference

Well done!



2.

Suppose we build a prediction algorithm on a data set and it is 100% accurate on that data set. Why might the algorithm not work well if we collect a new data set?

- ☐ We may be using bad variables that don't explain the outcome.
- ☐ We have too few predictors to get good out of sample accuracy.
- ☐ We have used neural networks which has notoriously bad performance.
- ☒ Our algorithm may be overfitting the training data, predicting both the signal and the noise.

Well done!



3.

What are typical sizes for the training and test sets?

- ☐ 50% in the training set, 50% in the testing set.
- ☐ 0% training set, 100% test set.
- ☒ 80% training set, 20% test set

Well done!

☐ 90% training set, 10% test set



4.

What are some common error rates for predicting binary variables (i.e. variables with two possible values like yes/no, disease/normal, clicked/didn't click)?



Sensitivity

Well done!



R^2

Well done!



Correlation

Well done!



Median absolute deviation

Well done!



Root mean squared error

Well done!



5.

Suppose that we have created a machine learning algorithm that predicts whether a link will be clicked with 99% sensitivity and 99% specificity. The rate the link is clicked is 1/1000 of visits to a website. If we predict the link will be clicked on a specific visit, what is the probability it will actually be clicked?

☐ 50%☐ 89.9%☒ 9%**Well done!**☐ 0.009%