Quiz 1

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Back to Week 1

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1.
Which of the following are components in building a machine learning algorithm?

- Machine learning
- Training and test sets
- Artificial intelligence
- Deciding on an algorithm.

Correct

- Statistical inference

1 / 1 points

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.v
- 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.

Correct

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1 / 1 points

3.

What are typical sizes for the training and test sets?

- 60% in the training set, 40% in the testing set.

Correct

- 20% training set, 80% test set.
- 100% training set, 0% test set.
- 90% training set, 10% test set

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1 / 1
points

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)? Check the correct answer(s).

- [ ] Median absolute deviation
- [ ] Correlation
- [ ] Root mean squared error
- [ ] R^2
- [x] Predictive value of a positive

Correct

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1 / 1
points

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?

- [ ] 0.009%
- [ ] 89.9%
- [ ] 99%
- [x] 9%

Correct