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☑ Quiz M2.03

Note: For each question **make sure you select all of the correct options—** there may be more than one! Don't forget to use the sandbox notebook if you need.

Question 1 (1/1 point)

Fitting a model with a high bias:

- ☑ a) causes an underfitted model? ✔

- ☐ b) causes an overfitted model?

- ☐ c) increases the sensitivity of the learned prediction function to a random resampling of the training set observations?

- ☑ d) causes the learned prediction function to make systematic errors? ✔

✔

Select all answers that apply

> EXPLANATION
>
> solution: a) d)
>
> A high biais will lead the learned prediction function to ignore some of the interesting structure of the data, at least in some regions of the feature space. This will cause some level of systematic prediction errors, even on the training set. As a result such a model is underfitting.

You have used 1 of 2 submissions

☐ a) causes an underfitted model?

☑ b) causes an overfitted model? ✔

☑ c) increases the sensitivity of the learned prediction function to a random resampling of the training set observations? ✔

☐ d) causes the learned prediction function to make systematic errors?

✔

Select all answers that apply

EXPLANATION

solution: b) c)

Fitting a high variance model happens when the fitting procedure makes it possible to learn a prediction function that is highly sensitive to details of the training set that are not necessarily present in the test data. This behavior is characteristic of overfitting models.

The prediction errors on the test set are therefore very random (not systematic).

You have used 1 of 2 submissions

YOUR EXPERIENCE
According to you, this whole 'Bias versus variance trade-off' lesson was:

○ **Too easy, I got bored**

○ **Adapted to my skills**

Submit

To follow this lesson, I spent:

- ○ **less than 30 minutes**

- ○ **30 min to 1 hour**

- ○ **1 to 2 hours**

- ○ **2 to 4 hours**

- ○ **more than 4 hours**

- ○ **I don't know**

Submit

FORUM (EXTERNAL RESOURCE)

+ New Topic

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