Quiz M6.01

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)

By default, a `BaggingClassifier` or `BaggingRegressor` draw:

- [x] a) random samples with replacement over training points ✔
- [ ] b) random samples with replacement over features
- [ ] c) random samples without replacement over training points
- [ ] d) random samples without replacement over features

✔

Select all answers that apply
Hint: it is possible to access the documentation for those classes by clicking on the links on their name.

EXPLANATION

solution: a)

Bagging corresponds to bootstrap-aggregating. Therefore, we resample the dataset with replacement several times to get several bootstrap samples. Each bootstrap sample will be used to train a model. The predictions of each model are aggregated via a vote or an average to give a final prediction for the ensemble as a whole.

It is also possible to randomly resample the features using `max_features` with a value in the (0.0, 1.0) range but this is disabled by default (`max_features=1.0` meaning all the features are used).

(`bootstrap_features=False` , the default).

You have used 1 of 2 submissions

Question 2 (1/1 point)

In a `BaggingClassifier` or `BaggingRegressor` , the parameter `base_estimator` can be:

- (●) a) any predictor
- ( ) b) a decision tree predictor
- ( ) c) a linear model predictor

You have used 1 of 1 submissions

Question 3 (1/1 point)

In the context of a classification problem, what are the differences between a bagging classifier and a random forest classifier:

- [x] a) in a random forest, the base model is always a decision tree ✔
- [ ] b) in a random forest, the split threshold values are decided completely at random
- [x] c) in a random forest, a random resampling is performed both over features as well as over samples ✔

✔

Select all answers that apply

A random forest is a bagging ensemble using trees. It includes an additional random resampling on the features at each split node in the trees.

For your information, it is possible to build bagged ensembles of trees with split thresholds that are selected completely at random. These models are named:

- ExtraTreesClassifier

- ExtraTreesRegressor

You have used 1 of 2 submissions

YOUR EXPERIENCE

According to you, this whole 'Ensemble method using bootstrapping' lesson was:

- ○ **Too easy, I got bored**
- ○ **Adapted to my skills**
- ○ **Difficult but I was able to follow**
- ○ **Too difficult**

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**

Submit

FORUM (EXTERNAL RESOURCE)

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