Quiz M6.02

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)

Select the correct answers:

- [x] a) Both bagging an boosting are combining predictors
- [ ] b) Both bagging and boosting are only working with decision trees
- [x] c) Boosting combines predictors sequentially
- [x] d) Bagging combines predictors simultaneously

✔

Select all answers that apply

You have used 1 of 2 submissions

Question 2 (1/1 point)

Boosting algorithms learn their predictor:

- [ ] a) by training predictors in parallel on slightly different datasets
- [x] b) by training predictors sequentially which correct previous prediction errors ✔

✔

Select all answers that apply

EXPLANATION

solution: b) c)

a) refers to bagging instead of boosting.

c) refers to how the prediction function of a boosting ensemble is defined while b) describes the successive iterations (what happens when calling the `fit` method).

You have used 1 of 2 submissions

Question 3 (1/1 point)

Histogram gradient boosting is an accelerated gradient boosting algorithm that:

- ○ a) takes a subsample of the original samples
- ◉ b) bins the numerical features ✔
- ○ c) takes a subsample of the original features

EXPLANATION

solution: b)

To reduce the number of splits evaluated for each feature, the data can be discretized into bins. The subsequent gradient boosting algorithm is adapted to compute histograms instead of relying on computationally expensive sorting operations to assess which split is the best. This explains why the histogram-based variant of

(typically 10,000 or more).

You have used 1 of 1 submissions

Question 4 (1 point possible)

Boosting tends to overfit when increasing the number of predictors:

- a) true ✔
- b) false ✖

EXPLANATION

solution: a)

Boosting algorithms generally tend to overfit when increasing the number of predictors. These predictors will overfit by over-correcting prediction errors made by previous predictors in the sequence when trained on data that contain a large enough fraction of samples with noisy labels. In consequence, this creates unstable prediction rules for the final ensemble and hurts its generalization performance.

You have used 1 of 1 submissions

YOUR EXPERIENCE

According to you, this whole 'Ensemble based on boosting' lesson was:

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

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)

There are no more M6. Quiz M6.02 topics. Ready to start a new cc

Terms and conditions