

Ensemble Learning:

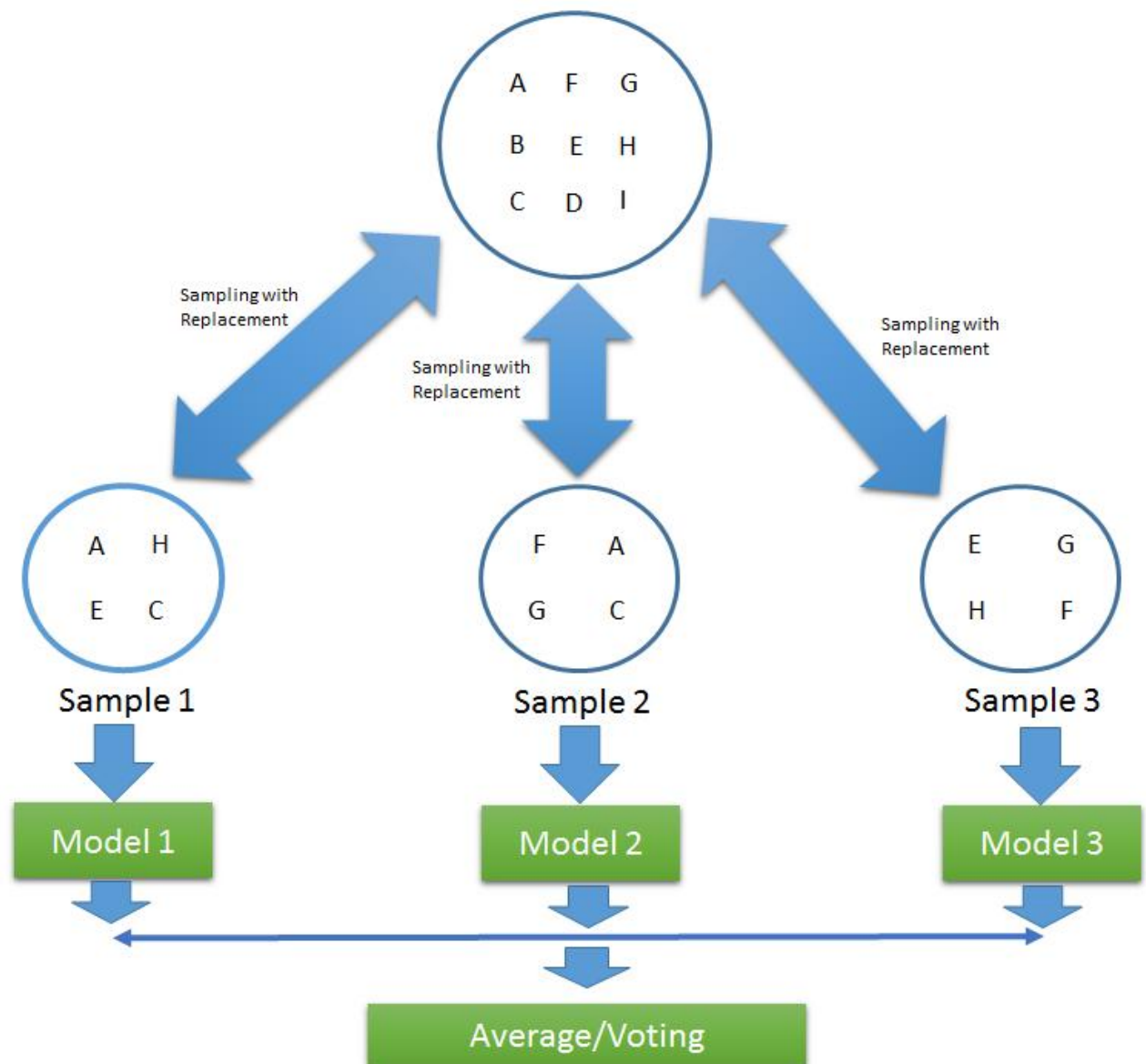
For getting optimal model, this method is used to combine multiple models. The reason is that the multiple model combine to give us optimal solution then a single model.

Types of Ensemble Technique

- Bagging
- Boosting
- stacking

What is Bagging?

In this technique a single training algorithm is used on different subset (with replacement) of training data. Once algorithm train on all subset then take aggregate of all subset and predict the final output. In short several models work independently and then average them for final result.

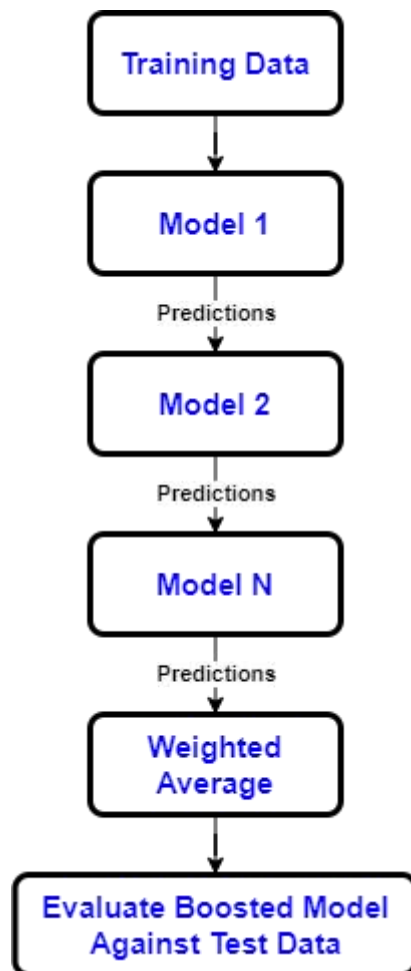


Disadvantages of a Bagging Model:

The main disadvantage is we can't interpret which features are being selected because of with replacement. Maybe it chose same feature again and again and some feature which are more important never used which cause loss of important information.

Boosting:

Boosting work sequentially for predicting the output depend on previous output. It improves the previous output and tries to reduce the bias on final prediction



Stacking:

Stacking technique use heterogeneous weak learners models means it contain different type of model and combine all the prediction and give that to as an input of final Model.

The predictions of each individual model are stacked together and used as input to a final estimator to compute the prediction

