

GRADIENT BOOST ALGORITHM

In this model works the following steps:

1. Model improves sequentially but not incremental weight concept
2. Optimize the loss function previous learner
3. Additional model regularize loss function

XG BOOST

Extreme Gradient boost Algorithm is XG Boost Algorithm.

XG Boost steps:

1. XG Boost repeatedly builds new models and combine them into an ensemble model
2. Initially build the first model and calculate the error for each observation in the dataset
3. Then you build a new model to predict those residuals(errors)
4. Then you add prediction from this model to the ensemble of models
5. XG Boost is superior compared to gradient boosting algorithm since it offers a good balance between bias and variance(Gradient boosting only optimized for the variance so tend to over training data while Xgboost offers regularization terms that can improve model generalization

LG BOOST ALGORITHM

Similar to XG Boost, LightGBM is a distributed high-performance framework that uses decision trees for ranking, classification and regression tasks.

The Advantages are as follows:

Faster training speed and accuracy resulting from Lgboost being a histogram-based algorithm bucketing of values (also requires lesser memory)

CAT BOOST ALGORITHM

What is CatBoost?

CatBoost is a ML gradient-boosting algorithm that's particularly effective for handling data sets with categorical features.