



Start-Tech Academy

Boosting

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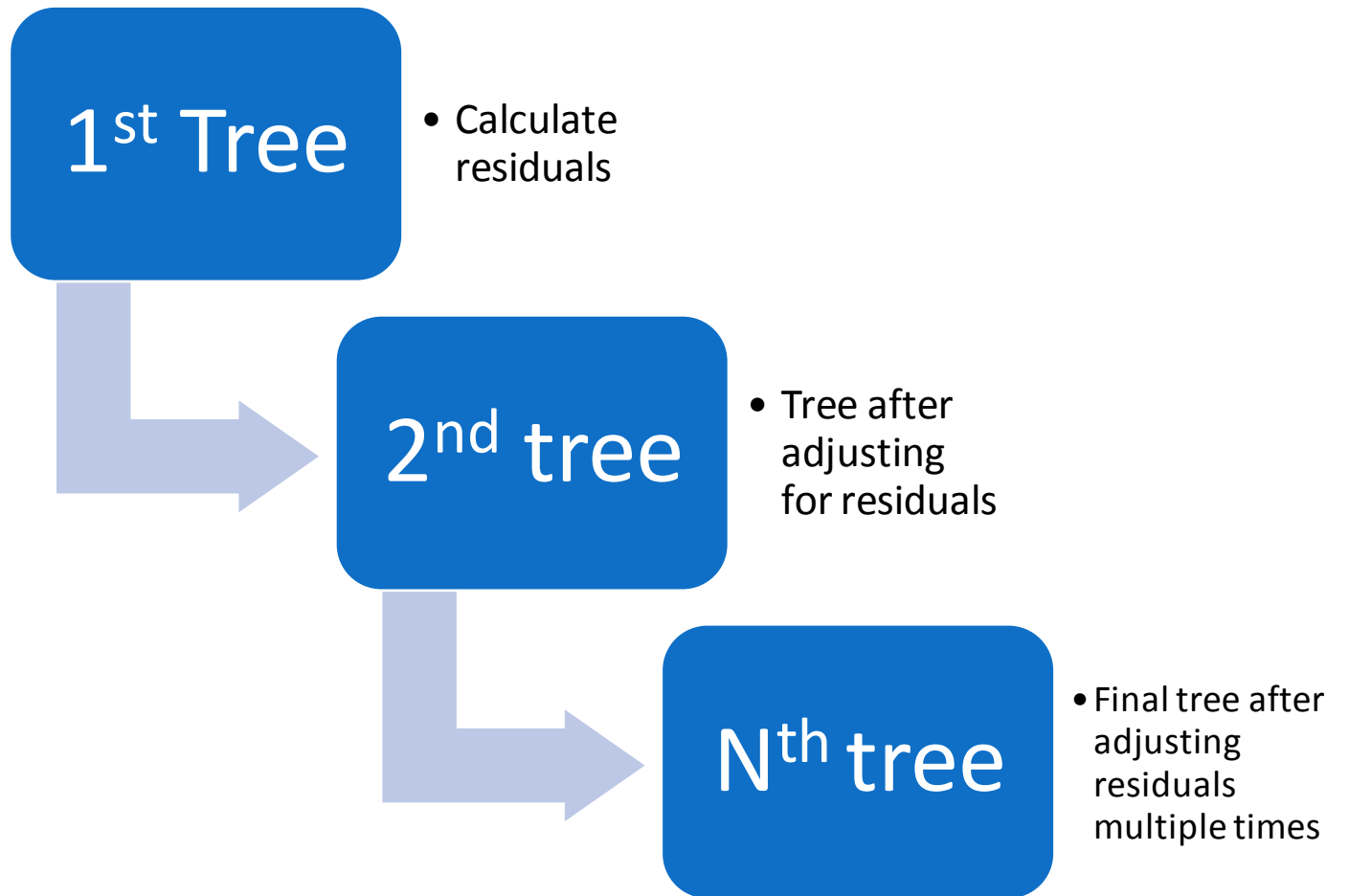
Process of turning a weak learner into a strong learner

1. Gradient Boost
2. Ada Boost
3. XG Boost



Boosting

Gradient Boosting

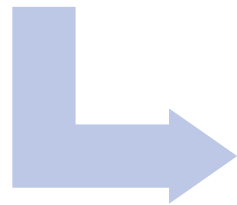


Boosting

Ada Boosting

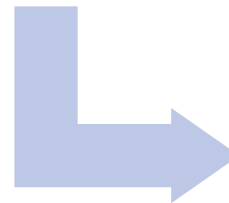
1st Tree

- Assign more weightage to misclassified observations



2nd tree

- Retrain the tree after accounting for weightages



Nth tree

- Final tree after accounting for weightages N-1 Times



Boosting

XG Boost

- Almost similar to Gradient Boost
- XG-boost used a more regularized model formalization to control over-fitting, which gives it better performance.
- For model, it might be more suitable to be called as regularized gradient boosting.

Regularization

The cost function we are trying to optimize (MSE in regression etc) also contains a penalty term for number of variables. In a way, we want to minimize the number of variables in final model along with the MSE or accuracy. This helps in avoiding overfitting

XG-Boost contains regularization terms in the cost function.

