

# Bagging and Boosting

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<https://quantdare.com/what-is-the-difference-between-bagging-and-boosting/>

## Similarities Differences

Both are ensemble methods to get N learners from 1 learner... but, while they are built independently for Bagging, Boosting tries to add new models that do well where previous models fail.

Both generate several training data sets by random sampling... but only Boosting determines weights for the data to tip the scales in favor of the most difficult cases.

Both make the final decision by averaging the N learners (or taking the majority of them)... but it is an equally weighted average for Bagging and a weighted average for Boosting, more weight to those with better performance on training data.

Both are good at reducing variance and provide higher stability... but only Boosting tries to reduce bias. On the other hand, Bagging may solve the over-fitting problem, while Boosting can increase it

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