

ADA BOOST ALGORITHM

What is ADA Boost

- Adaboost is short for “ADAPTIVE BOOSTING”
- Adaboost is a meta-algorithm
- Can be used with other learning algorithm to improve their performance.
- It is a supervised learning algorithm that is used to classify data by combining multiple weak or base learners (e.g., decision trees) into a strong learner.

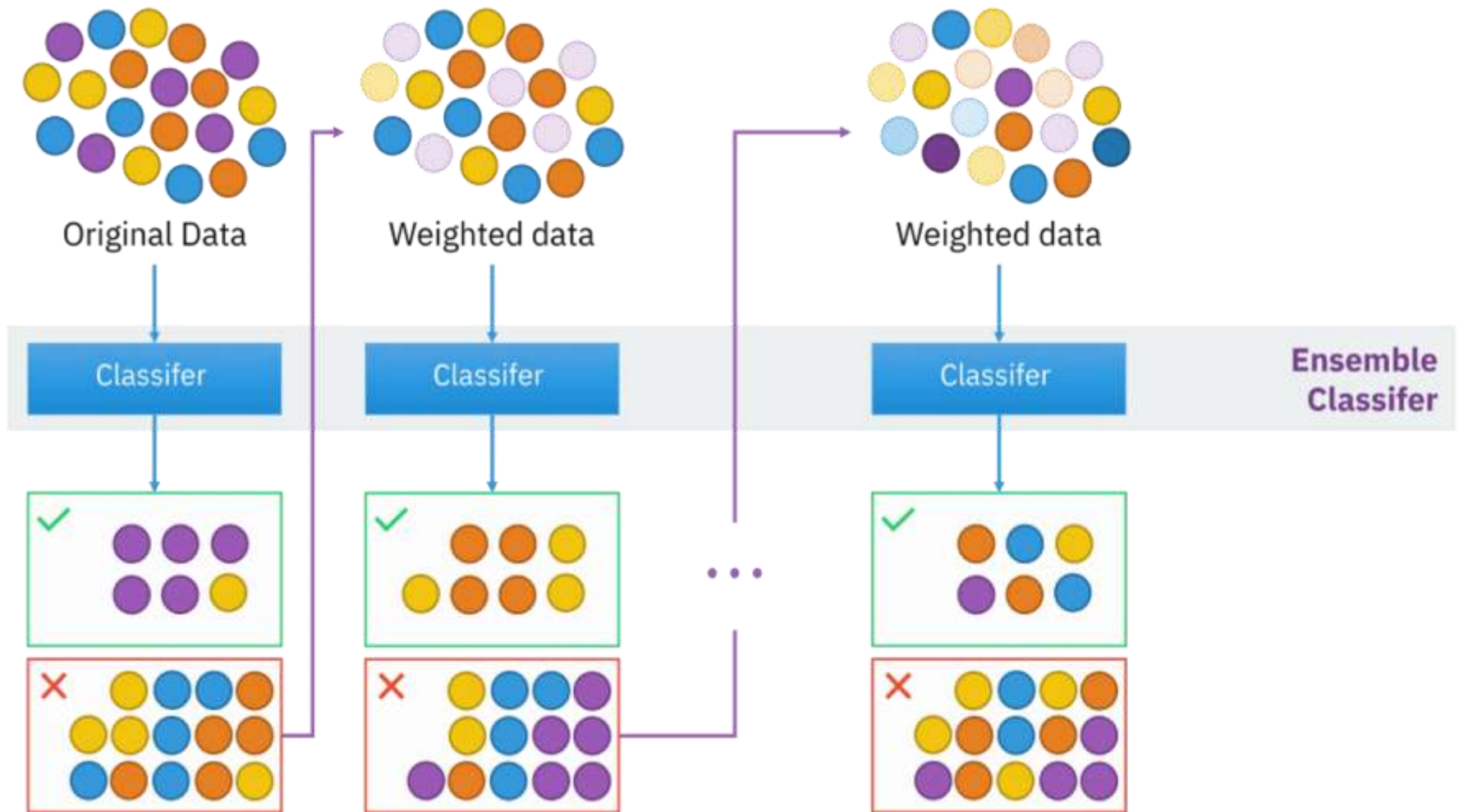
Key Concepts of ADABOOST:

Weak Learner: A model that performs slightly better than random guessing (commonly a decision stump — a one-level decision tree).

Boosting: An ensemble technique that combines multiple weak learners in sequence, where each learner focuses more on the mistakes of the previous ones.

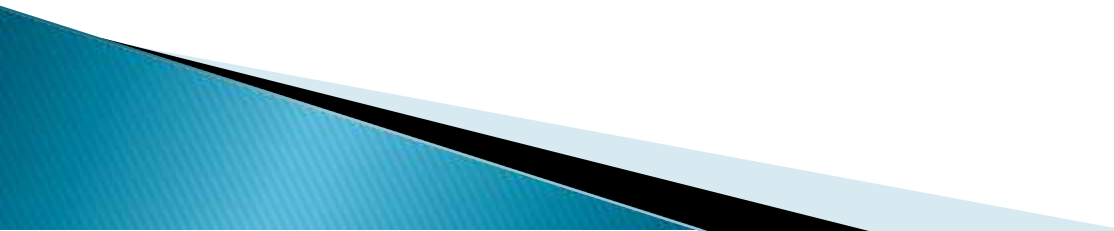
Adaptive: It "adapts" by assigning more weight to misclassified instances in each iteration.

How Adaboost works



Use cases of Adaboost:

Adaboost are mainly used in following fields:

- Spam detection
 - Face recognition
 - Text classification
 - Medical diagnosis
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Advantages and Disadvantages of Adaboost

Advantages & Disadvantages



Accuracy Improvement



Versatility



Robustness



Speed



Scalability



Sensitivity to Noisy Data



Complex Implementation



Computational Cost



Bias towards Certain Features



Vulnerability to Outliers