Eternaltek

22/100 Days of Data Science

AdaBoost Algorithm

- AdaBoost, short for Adaptive Boosting, is a powerful algorithm in machine learning that falls under the category of ensemble methods.
- Ensemble methods combine multiple models to create a single, more robust model.
- In AdaBoost's case, it specifically focuses on combining weak learners into a strong learner.

Weighted Training Instances: It starts by assigning equal weights to all instances in the training data.

Train a Weak Learner: The algorithm then trains a weak learner, which can be any basic classification algorithm like a decision tree.

Evaluate Learner Performance: It evaluates the performance of the weak learner on the training data. Instances that the weak learner misclassified get higher weights in the next iteration. This forces the next learner to focus on the "harder" examples.

Repeat and Combine Learners: This process of training a weak learner, evaluating it, and adjusting weights is repeated for multiple iterations. Each iteration creates a new weak learner that focuses on the previously misclassified examples. Finally, the predictions from all the weak learners are combined to make a final prediction.