ADABOOST Algorithm

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1 Algorithm

1. Initialize weights uniformly
2. for each iteration t do following:
3. Find weak learner which minimizes error
4. Set weight based on weak learner based on its accuracy
5. Increase weights of misclassified observations.
6. Increase weights of misclassified observation.
7. renormalize weights so that their summation = 1
8. Make final prediction based on weighted majority vote of weak learner prediction.

2 Procedure

1. We will generate data set with two classes which is not linearly separable.
2. As we are understanding ensembling of adaboost we will make maximum depth is 1 and maximum leaf nodes as two for each stump.
3. We will initialize sample weights uniformly
4. we can notice that for iterations 2,5,7,10 all points are classified as positive.
5. As all negative points are misclassified and increases their weights and in next iteration we will get better decision boundary.