**## 3. \*\*Ensemble: Gradient Boosting and Hist-Gradient Boosting\*\*:**

For our last two models, we look at the above listed second form of ensemble machine learning methods, Boosting. As stated before, the ensemble boosting method is a machine learning technique where multiple weak leaners are used to sequentially train each other, with each iteration improving on the last until a final tuned model has been made.

Gradient boosting or more accurately Gradient Descent Boosting, performs this improvement process by attempting to minimize the loss function between each iteration. The loss function through the use of the Mean Squared Error or Cross-Entropy using the gradient descent, thus it’s name. Essentially, the algorithm will calculate the gradient of the loss in respect to its predictions for that run. Then it will take those results and pass them into the next leaner. This will continue until the ensemble has been completed, creating our trained model.