Stirring Minds

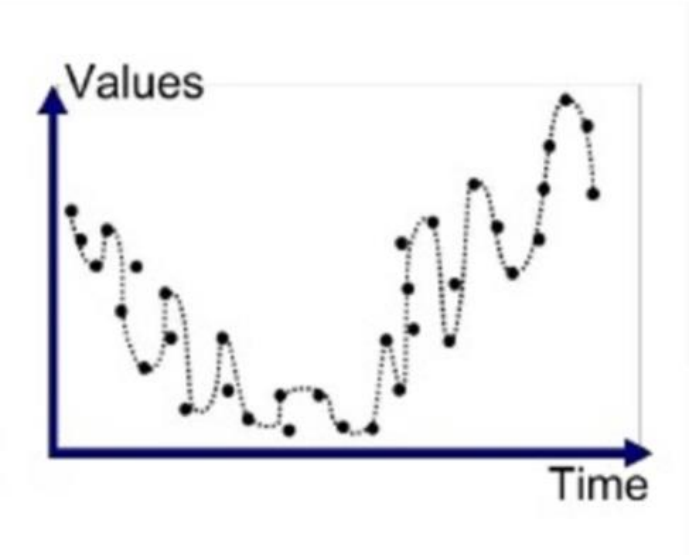
MACHINE LEARNING – TASK 2:

Q. You were assigned to a project where you built a random forest model with 10000 trees. You were in cloud-nine after getting a training error of 0.00. But the validation error is 46.89. What went wrong? Does that mean that you trained your model wrong? (Explain briefly)

Ans. Here we encounter the case of Overfitting.

Overfitting is an error that occurs when a function is too closely fit to a limited set of data points. Overfitting the model generally takes the form of making an overly complex model to explain idiosyncrasies in the data under study

Overfitting is the case in which we get low bias and high variance. Here we get training error 0 but testing error would be very high.



The Above is a Overfitted Model. Here the training data is perfectly fitted but while testing the predictions fail for more than 50% of the test data.

This kind of model is not at all useful. Hence while creating a model we must ensure that both training and test errors must be balanced to get a good model.

Q. How would you explain Machine learning to a grade-1 kid (probably 5-6 years old)?

Ans. For a 1st-grade kid it would be better to explain it in terms of his daily routine.

It would be like

-If you are at school and it's the last class of the day. As soon as the bell rings you tend to pack your bags and leave the school. This is because you know that after the last bell you

are free to go home thanks to your prior experience. Similarly, if we train our machines with some prior experience it learns and helps us predict new things.

-Another way would be like we can distinguish between dogs and cats because we have seen a lot of them in our surroundings or in books etc. In the same way if we let the machine learn the differences between dogs and cats by feeding them with some images we have, they can predict whether an image belongs to dog or a cat.

-Another way would be like if you do your homework your teacher gives you a chocolate as reward. Hence you do the homework to claim your reward. In the same way we reward our machines to do the right work by giving them some reward.

Hence these are few ways in which we can teach a 1st-grade kid about Machine Learning.