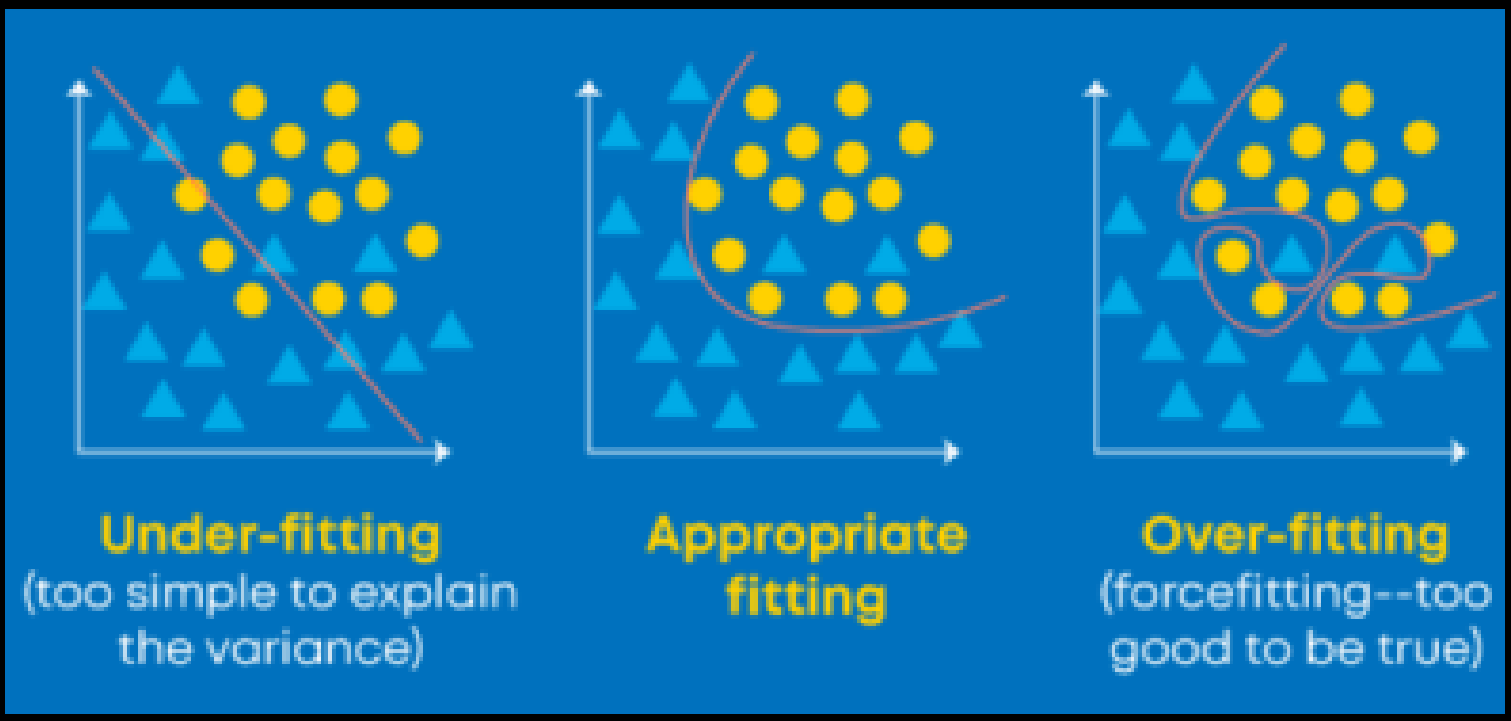
Daily Machine Learning Interview Questions

61. When does regularization come into play in Machine Learning?

At times when the model begins to underfit or overfit, regularization becomes necessary. It is a regression that diverts or regularizes the coefficient estimates towards zero.

It reduces flexibility and discourages learning in a model to avoid the risk of overfitting. The model complexity is reduced and it becomes better at predicting


Under-fitting
(too simple to explain the variance)
Appropriate fitting
Over-fitting
(forcefitting--too good to be true)

62. What is Time series?

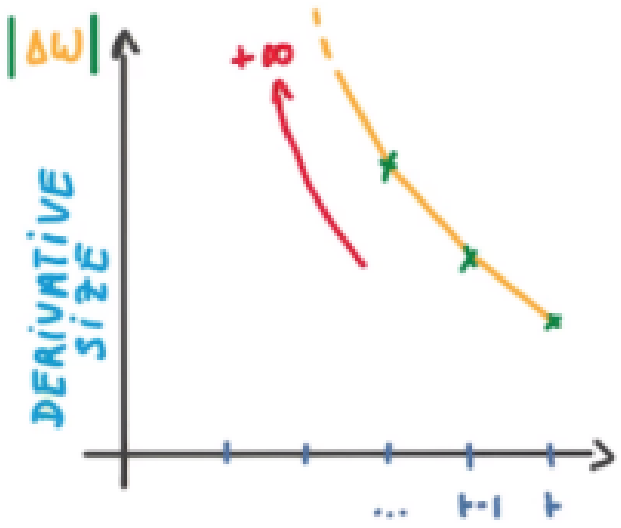
A Time series is a sequence of numerical data points in successive order. It tracks the movement of the chosen data points, over a specified period of time and records the data points at regular intervals.

Time series doesn’t require any minimum or maximum time input. Analysts often use Time series to examine data according to their specific requirement.

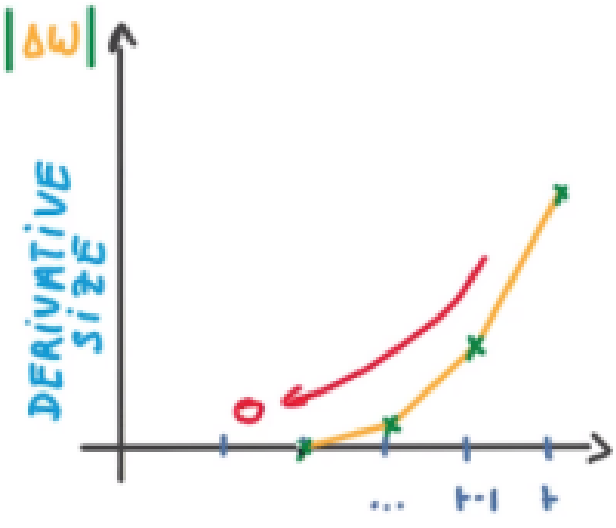
63. What is the exploding gradient problem while using back propagation technique?

When large error gradients accumulate and result in large changes in the neural network weights during training, it is called the exploding gradient problem. The values of weights can become so large as to overflow and result in NaN values. This makes the model unstable and the learning of the model to stall just like the vanishing gradient problem.

EXPLODING GRADIENT



VANISHING GRADIENT



64. What’s a Fourier transform?

Fourier Transform is a mathematical technique that transforms any function of time to a function of frequency. Fourier transform is closely related to Fourier series. It takes any time-based pattern for input and calculates the overall cycle offset, rotation speed and strength for all possible cycles.

Fourier transform is best applied to waveforms since it has functions of time and space. Once a Fourier transform applied on a waveform, it gets decomposed into a sinusoid.

65. Explain the difference between Normalization and Standardization.

Normalization and Standardization are the two very popular methods used for feature scaling. Normalization refers to re_scaling the values to fit into a range of [0,1].

Standardization refers to re-scaling data to have a mean of 0 and a standard deviation of 1 (Unit variance). Normalization is useful when all parameters need to have the identical positive scale however the outliers from the data set are lost. Hence, standardization is recommended for most applications.

Thank You