

# Important Questions of Machine Learning

## Viva Questions

What is the role of the Activation functions in Neural Networks? Name any 3 activation functions and their respective range.

Explain the end to end working of 1 epoch, i.e from random weight initialization to improving these weights.

Mention the update equation for weights and bias.

List down the cases where we should be using softmax and sigmoid activation functions.

Explain Gradient Descent and its types.

Explain potential problems w.r.t gradient descent convergence if we define our learning rate too high or too low.

Define normalization, why do we do it and do we have any alternatives?

Mention binary cross entropy loss and where else is this loss used in ML. Do we have an alternate naming for this loss?

Name the required parameters we use in model.compile and an example of each.

Name 5 hyper parameters that we can change while formulating our ANN.

Mention 2 techniques to make our image data's dimension model ready.

What is the difference between Epoch, Batch, and Iteration in Neural Networks?

Write X (input) in terms of W, B & A where W = Weights, B = Bias & A = Activation function.

Mention logistic regression in terms of a forward pass of a neural network having no hidden layers and sigmoid as the activation function.

Mention step-by-step process of K-Means.

Compare the equation of linear equation with ReLU function.

Explain IG. What is the formula of information gain?

List some methods to encode categorical data.

What are some methods to avoid overfitting in Decision Trees?

How is polynomial regression different from linear regression?

What do we use to check the accuracy of classification problems and why?

What are some methods to avoid overfitting in Decision Trees?

What is precision & Recall. How do we balance the effect of both?

What is testing set & how much we generally allocate to the test data?

What do you understand by Type I vs Type II error?

What is unsupervised learning? Give a real time example of the same.

Explain how a kernel is used in ML?

What are the some waysto handle missing data?

Can you give an example of Where the Median is better to measure than the mean?

What are the main points of difference between Bagging and Boosting?

List points of differences between KNN & Kmeans.

You got delighted after getting training error as 0.00. But, the validation error is 34.23. What is going on? Haven't you trained your model perfectly?

We know that one hot encoding increasing the dimensionality of a data set. But, label encoding doesn't. How ?

What is K-Fold technique? Explain.

What do you mean by lazy learner? Give an example of a ML algorithm which is a lazy learner.

How Could the Less Value of K Lead to Overfitting in the KNN Algorithm? Explain.

What are the attribute selection measures used by the ID3 algorithm to construct a Decision Tree?

What is the formula of information gain? Explain IG.

Are Decision Trees affected by the outliers? Explain.

