One of the definitions of Machine Learning is: “The computer program which does the task without being explicitly programmed”. What does the term “without being explicitly programmed” mean here?

Give any four key terminologies associated with Machine Learning.

What do you mean by deterministic algorithm and how Machine Learning algorithm is not a deterministic algorithm?

Give any formula associated with Machine Learning which emphasizes that Machine Learning algorithms are probabilistic algorithms.

When Machine Learning algorithms shall give stable results?

In the Logistic Regression algorithm, one should not use Mean Square Error as Loss function: Why?

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Give any four key terminologies associated with respect to Artificial Neural Networks?

Give any one reason when Artificial Neural Networks will overfit to the problem in hand.

When will affine transformation happen in Artificial Neural Network?

Give any one drawback of Sigmoid activation.

Why not use the step function as an activation function?

Give the equation of Tanh(x) function.

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How to get the step function out of sigmoid function?

When does sigmoid activation function give exactly 0.5 probability for positive class and negative class when used at the output layer?

Give the equation of Rectified Linear Unit (ReLU) function.

Artificial Neural Network works in the space domain: True or False?

When can we say that Artificial Neural Network under fits the data?

What is the difference between parameters and hyper parameters in Machine Learning?

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For any Matrix the EigenValues exists: True or False?

What is the relationship between EigenVectors and EigenValues?

When the Matrix is of dimension N x N then for that matrix M EigenValues can exist such that M>N: True or False?

What does zero EigenValue indicate?

In which case the Principal Component Analysis algorithm is perfectly lossless?

Give the relation between Matrix, EigenValue & EigenVector.

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What is the property of Principal Component EigenVector with respect to information retention?

The image is gray level and 16 bits are used to represent every pixel. What is the dimensionality of the image?

Why are gray images good candidates for image compression by using Principal Component Analysis algorithm?

What do you mean by positively correlated data points? Consider points in 2D.

When the points have -1 correlation between them? Consider points in 2D.

Consider the data points: [1,1,1,1,1], [2,2,2,2,2], [3,3,3,3,3], [4,4,4,4,4], [5,5,5,5,5]: How many principal components are required to represent these points at max? Note that at present the data is in 5D.

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~~What is the equation for Hing loss?~~

Give any one advantage of the Support Vector Machine algorithm.

In which case the use of Support Vector Machine is discouraged?

Give names of any three kernels used in Support Vector Machine.

Decision Tree algorithm can be seen as a bunch of If then statements: True or False?

~~Name any one hyper parameter with respect to Random Forest.~~

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In the K Nearest Neighbours algorithm, K stands for what?

In the K Means algorithm, K stands for what?

Give the pseudo algorithm for K Means technique.

In general, when can one say that a Machine Learning algorithm is learning correctly?

The value of learning rate in Artificial Neural Network can be more that one: True or False?

In the Logistic Regression algorithm, one should not use Mean Square Error as Loss function: Why?

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~~Give step wise explanation/algorithm of Recommender System algorithm~~