**Home Learning Task:**

*Select one or more choices from the list of common Machine Learning Algorithms, do some investigations and write me a short summary. I am looking for the following:*

1. ***Is it Supervised/Unsupervised/Reinforcement learning?***

* Linear Regression

Regarding Linear Regression is commonly used for predictive analysis, it is classed as “supervised learning”, as it is the process of inferring a function from labelled real time data, with direct feedback provided, which can then be used to predict or mapping further.

* SVM (Support Vector Machine)

Support Vector Machine (SVM) is also classed as supervised learning, as it is the process of inferring a function from labelled real time data, even potentially from linear models.

1. ***What does the algorithm do?***

* Linear Regression

These regression estimates are used to explain the relationship between one dependent variable and one or more independent variables.

* SVM (Support Vector Machine)

The main task of SVM’s algorithm is to find the most “correct line”, or hyperplane, which divides data into two classes. An SVM’s algorithm that receives input data and returns such a dividing line.

[ To find out the best line(separator), SVM follows a criterion, a line is observed around data points that lie closet to both classes. These points are called support vectors. After that, a concurrence is established between a dividing plane and support vectors. The distance between the points and the dividing line is termed as margin. Basically, SVM algorithms take this margin addresses as maximum into account, and when this margin attains a maximum, hyperplane gets optimized.]

1. ***In which situations will it be most useful?***

* Linear Regression

Three major uses for regression analysis are:

(1) determining the strength of predictors,

(2) forecasting an effect,

(3) trend forecasting.

* SVM (Support Vector Machine)

Most useful for classification of data, and providing margins between data sets.

1. ***(Optional) Can you find any examples of where this algorithm has been used?***

* Linear Regression

Example: Medical researchers often use linear regression to understand the relationship between drug dosage and blood pressure of patients.

* SVM (Support Vector Machine)

These algorithms have been widely used for identifying among biological sequences. For example, classification of genes and many other biological problems.