**Linear Regression**

1. Is it Supervised/Unsupervised/Reinforcement learning?

* Supervised learning

1. What does the algorithm do?

* Process of finding the correlations between dependent and independent variables.

1. In which situations will it be most useful?

* For predictive analysis and modeling

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

* Medical researchers often use linear regression to understand the relationship between drug dosage and blood pressure of patients.
* Agricultural scientists often use linear regression to measure the effect of fertilizer and water on crop yields
* Data scientists for professional sports teams often use linear regression to measure the effect that different training regimens have on player performance.

**Logistic Regression**

1. Is it Supervised/Unsupervised/Reinforcement learning?

* Supervised learning

1. What does the algorithm do?

* Logistic regression signifies the association between one dependent binary variable and one or more independent variables which can be nominal, ordinal, or ratio level variables.

1. In which situations will it be most useful?

* Where speed is a necessity (gaming)

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

* Trauma and Injury Severity Score ([TRISS](https://en.wikipedia.org/wiki/TRISS)), which is widely used to predict mortality in injured patients

**Decision Tree**

1. Is it Supervised/Unsupervised/Reinforcement learning?

* Supervised learning

1. What does the algorithm do?

* It uses a decision tree to go from observations about an item to conclusions about the item’s target value

1. In which situations will it be most useful?

* Operations research
* Operations management
* For determining complex decisions

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

* Gerber Products Inc (baby products company) recently used decision tree analysis in deciding whether to continue using PVC.

**SVM (Support Vector Machine)**

1. Is it Supervised/Unsupervised/Reinforcement learning?

* Supervised learning

1. What does the algorithm do?

* Creates a line or a hyperlane which separates the data into classes

1. In which situations will it be most useful?

* Where the number of dimensions is greater than the number of samples
* For memory efficiency

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

* The SVM algorithm has been widely applied in the biological and other sciences. They have been used to classify proteins with up to 90% of the compounds classified correctly.

**KNN (K-Nearest Neighbors)**

1. Is it Supervised/Unsupervised/Reinforcement learning?

* Supervised learning

1. What does the algorithm do?

* The KNN algorithm assumes that similar things exist in close proximity. It hinges on this assumption being true enough for the algorithm to be useful. KNN captures the idea of similarity with some mathematics.

1. In which situations will it be most useful?

* Where high accuracy is required

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

**K-Means**

1. Is it Supervised/Unsupervised/Reinforcement learning?

* Unsupervised learning

1. What does the algorithm do?

* K-means clustering is a method of vector quantization that aims to partition n observations into k clusters in which each observation belongs to the cluster with the nearest mean, serving as a prototype of the cluster

1. In which situations will it be most useful?

* Where you want to make groups of similar things from a randomly distributed collection of things

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

* It has been successfully used in market segmentation, computer vision and astronomy