How does Machine Learning work? It’s based on stupid algorithms but can do awesome and hard things if they can have enough data. Most of them use statistics. We have a lot of example images and we give to the algorithm a new one to establish if it’s a Dog or a Cat. The simplest way is the Nearest Neighbor. It searches in each class the image that is the most similar to the processed one and assigns to the given picture the class “cat” for example. But this type of algorithm can be always right. If we give a picture of a black cat and finds that its neighbor is a black dog, the output will be wrong- To improve the Nearest Neighbor, we search for 3 Nearest Neighbors; this improved version is called kNN. K stands for the number of nearest neighbors; n n stands for nearest neighbors. One Nearest Neighbor is hardly used while kNN is more common. Another problem is: what do we mean with Similarity/neighbor? The algorithm needs a mathematical definition of similarity (a number that says how similar 2 images are). KNN is slow since you have to compare the given image to all the examples. A solution could be select a limited number of important examples.   
A good number of examples, a sophisticated Similarity Measure and other stuff is the basis of Support Vector Machines. A simple mathematical function to do classification can work with the size of the animals (dogs are bigger than cats). This value that identifies the size is called Threshold.  
But there is still a problem. If we are comparing a chihuahua, which is a small dog, it can be classified as a cat. So, there is a Decision Trees: it defines more features in each class.  
The details of a mathematical function are learned from data using optimization. The details of the models are chosen automatically so they can give the best result on the training data, this process is called optimization