

Machine learning is a subfield of artificial intelligence that allows a computer to improve its own performance over time without being given explicit instruction. Machine learning is poised to significantly impact productivity across industries globally. Supervised learning is a type of machine learning. Unsupervised learning uses unlabeled data while supervised learning uses labeled data (data: any pertinent information such as text, numbers, images, etc..). Supervised machine learning uses this labeled data to train itself. Labeled data contains input data and a corresponding label for the data. For example, an image of a cup could be labeled “cup”.



In the training process, the machine uses this labeled data and makes predictions. The machine then compares its predictions to the labeled data values, also known as target values. For example, the cup image is input, the machine predicts “bowl” and then compares this to the target value “cup”.

Once the training process has been completed, new, unseen data is used to test the machine. The goal of the machine is to correctly predict the target value or “correct answer” for the test data.



There are two types of supervised machine learning: classification and regression. Classification is used to predict a categorical variable also called a “class label”. For example, an algorithm trained to predict the breed of a dog could predict “golden retriever” or “black labrador”, etc. In this scenario, the different breeds act as the class label. Regression is used to predict a “continuous target value”. Pricing is an example of this, for example, an algorithm trained to predict car prices could make a price prediction of \$15,000 for one car, and \$21,516 for another, i.e. an arbitrary value.



Information Sourced from: "Supervised Machine Learning Explained for Beginners," YouTube, uploaded by AssemblyAI, 22 Jan. 2022, <https://www.youtube.com/watch?v=MuzPOINoLdc>