

*Day 01*

# *30 Days of Machine Learning*

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# What is Machine Learning?

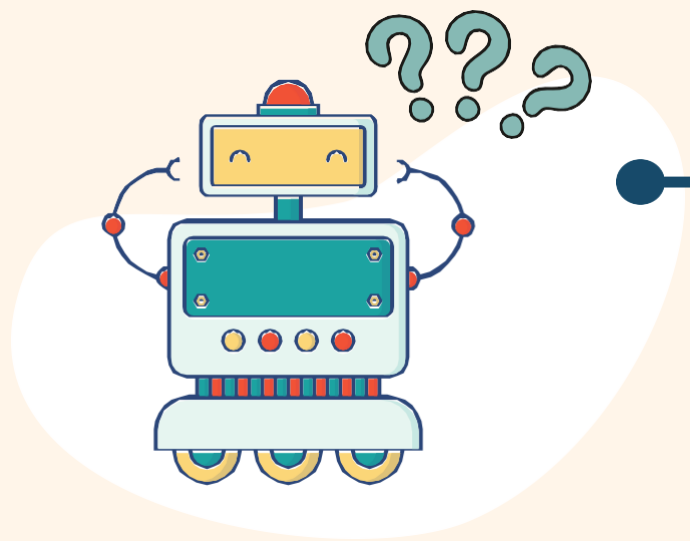
Machine learning, it's a popular buzzword that you've probably heard thrown around with terms artificial intelligence or AI, but what does it really mean?



## Machine Learning

is the process of a computer program or system being able to learn and get smarter over time? At the basic level, machine learning uses algorithms to find patterns and then applies the patterns moving forward.





## How does ML work?

Machine learning works by using algorithms. These algorithms are constantly searching for patterns, looking for data that can be understood and grouped together. It uses this data and the algorithms to help it learn from the past and then make guesses or predictions about the future.

## Machine Learning Algorithms

### Supervised learning

It involves a human giving the machine both the input and the output.

It uses algorithms to find the connections between point A and point B and can learn from what it is observing about both the input variable and the output variable.

### Unsupervised learning

Unsupervised learning involves just giving the machine the input, and letting it produce the output based on the patterns it can find. Unsupervised learning helps machines learn and improve based on what they observe.

### Reinforcement learning

Often classified as semi-supervised learning, reinforcement learning is when a machine is told what it is doing correctly so it continues to do the same kind of work. The real goal of reinforcement learning is to help the machine or program understand the correct path so it can replicate it later.

# Supervised learning

Supervised learning is when the model is getting trained on a labelled dataset. A labelled dataset is one that has both input and output parameters.

Supervised learning is where we have input variables (X) and an output variable (Y).

We use a machine-learning algorithm to learn the mapping function from the input to the output.

It is known as the Supervised learning because the process of learning from training data can be thought from a teacher who is supervising the learning process. In the below figure, the teacher explicitly provides information on the input data in the form of annotation.

