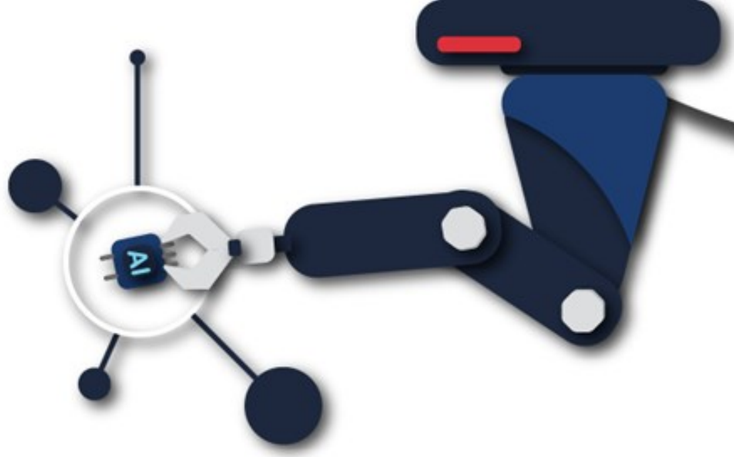
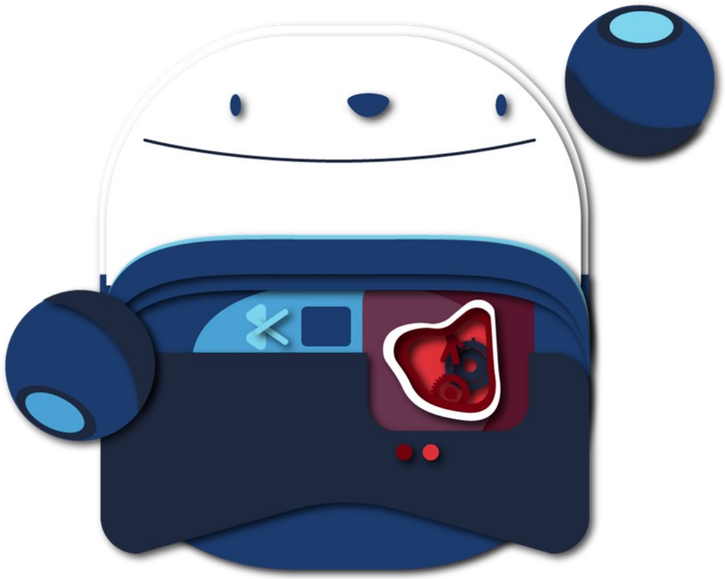


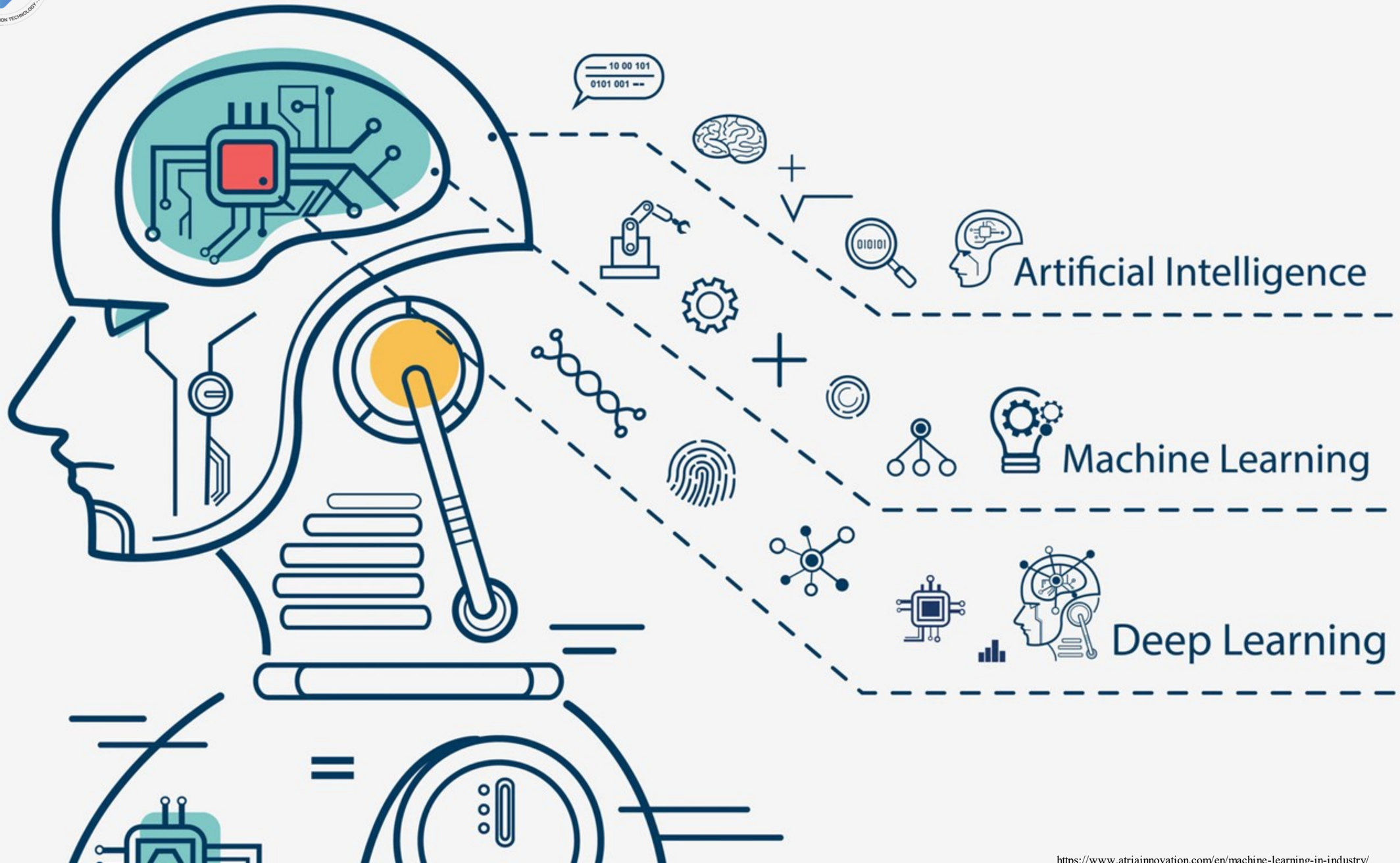
Machine Learning

Topics

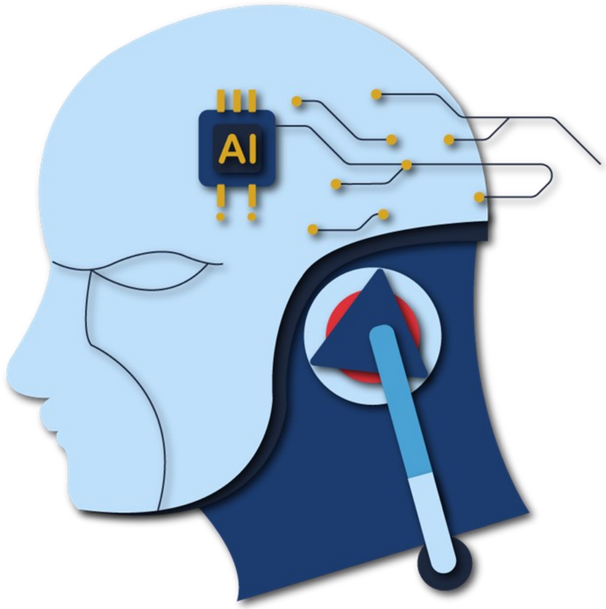
Machine Learning

- What is Machine Learning?
- Basic Machine Learning Concept.
- Machine learning types.
  - Supervised learning.
  - Unsupervised learning.
- Models and Algorithms.
- Use of Machine learning.

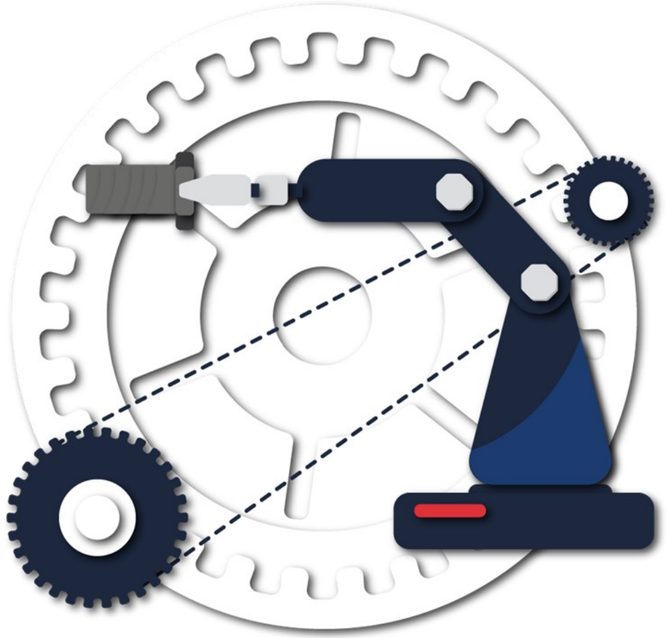


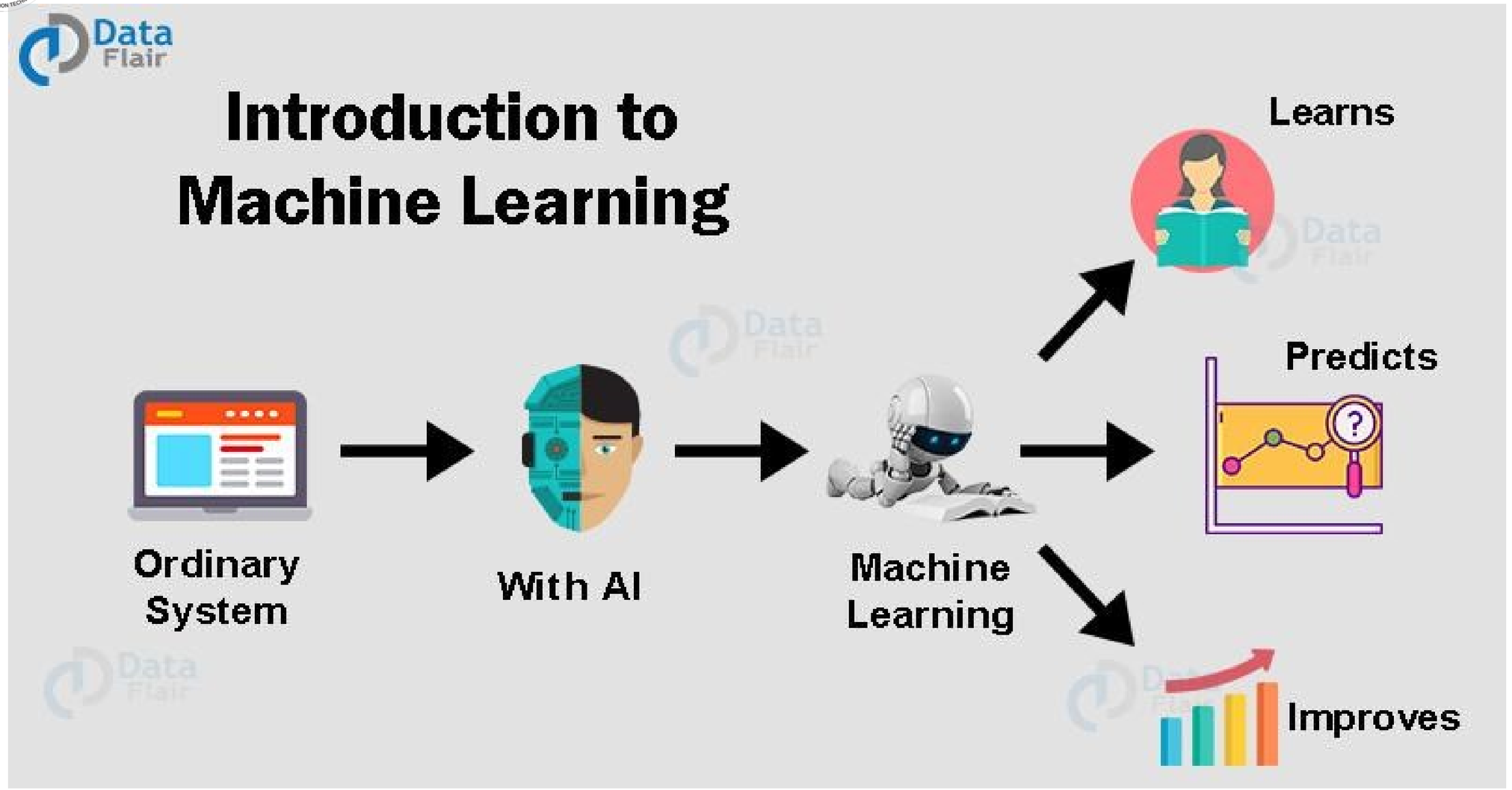


https://www.atriainnovation.com/en/machine-learning-in-industry/



Machine Learning





https://data-flair.training/blogs/machine-learning-tutorial/

What is Machine learning?

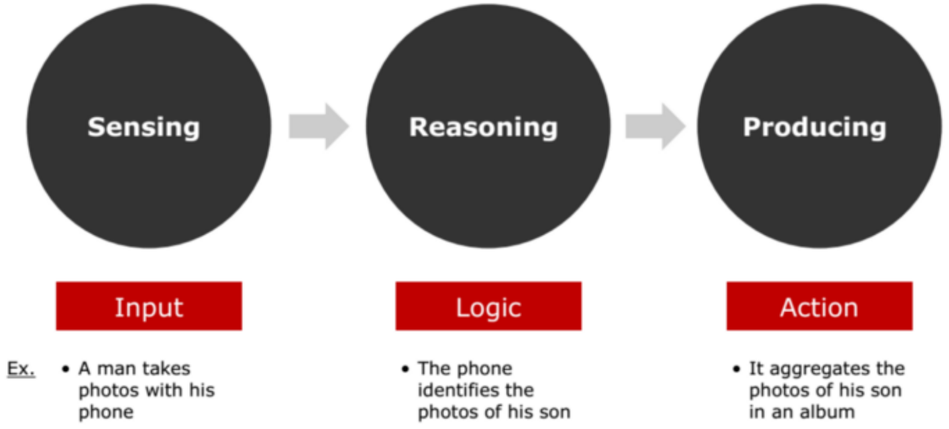
Machine learning is a system that can learn on its own from examples without programmer input. This breakthrough came with the idea that computers could simply learn from data to produce accurate results.

https://bigr.io/deep-learning-neural-networks-iot/

Concept of Machine Learning

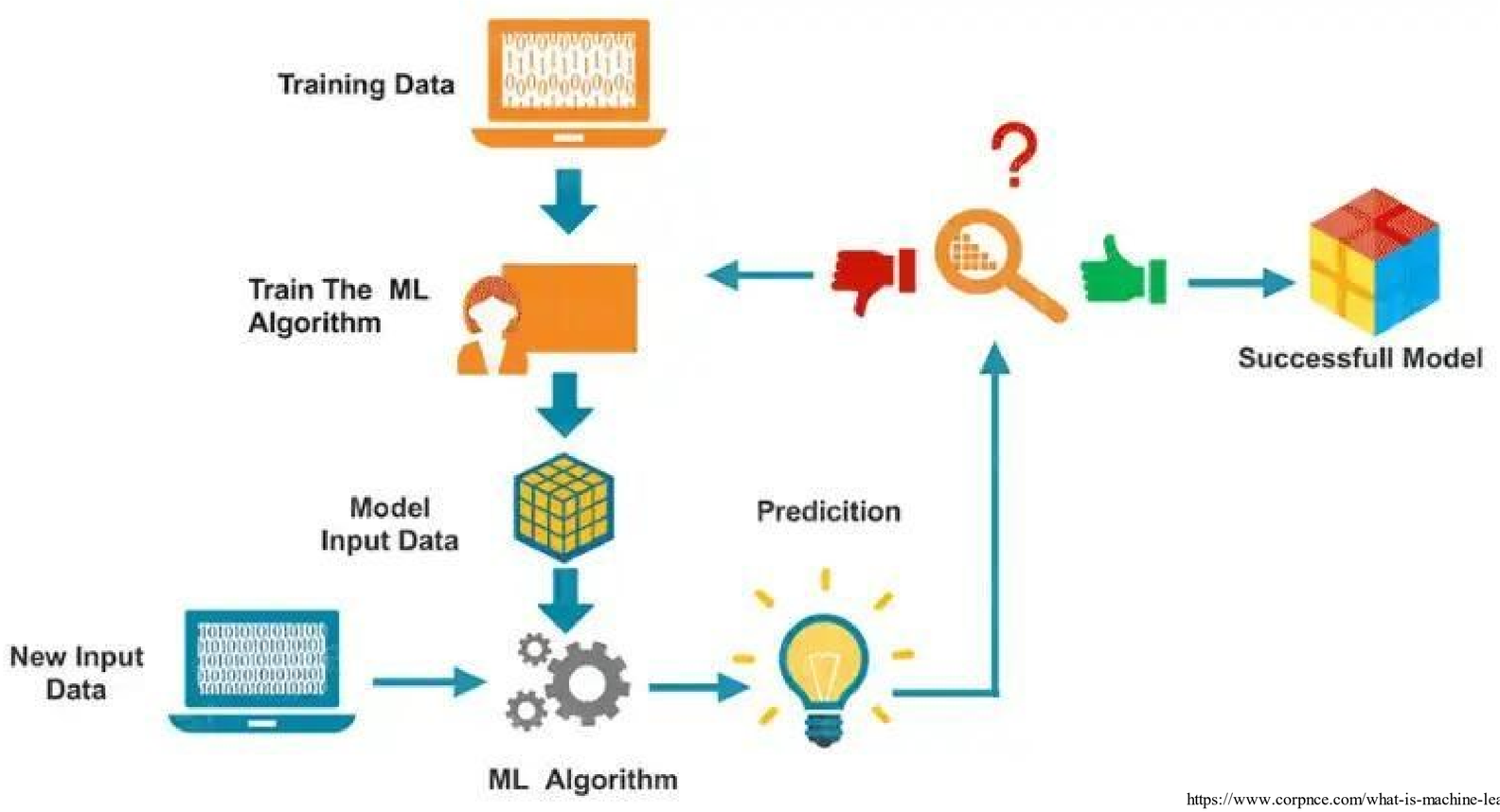
How to do machine learning? First, putting data into the computer. Then the computers will analyze the data and find specific patterns. When the computer finds that pattern, it will adjust the way to process or organize data to reflect that pattern. After enough patterns are found, they can begin to make predictions. In general, if you enter more data for training, the computer will be more accurate and faster. Machine Learning can be divided into 3 types:

- Supervised Learning
- Unsupervised Learning
- Reinforce Learning



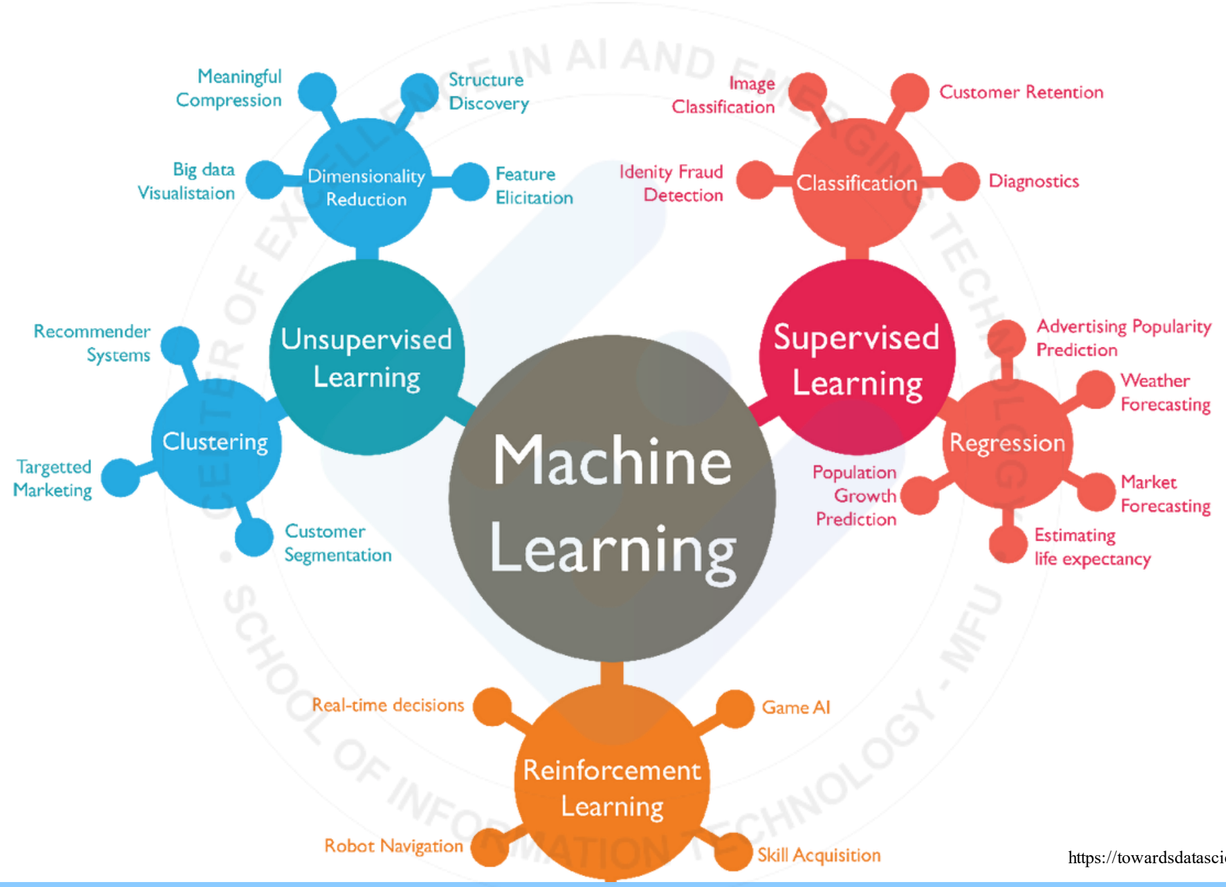
https://medium.com/redpoint-ventures/three-things-you-need-to-know-about-machine-learning-99e6f5815aee

How does Machine Learning work?



https://www.corpnce.com/what-is-machine-learning-everything-you-need-to-know/

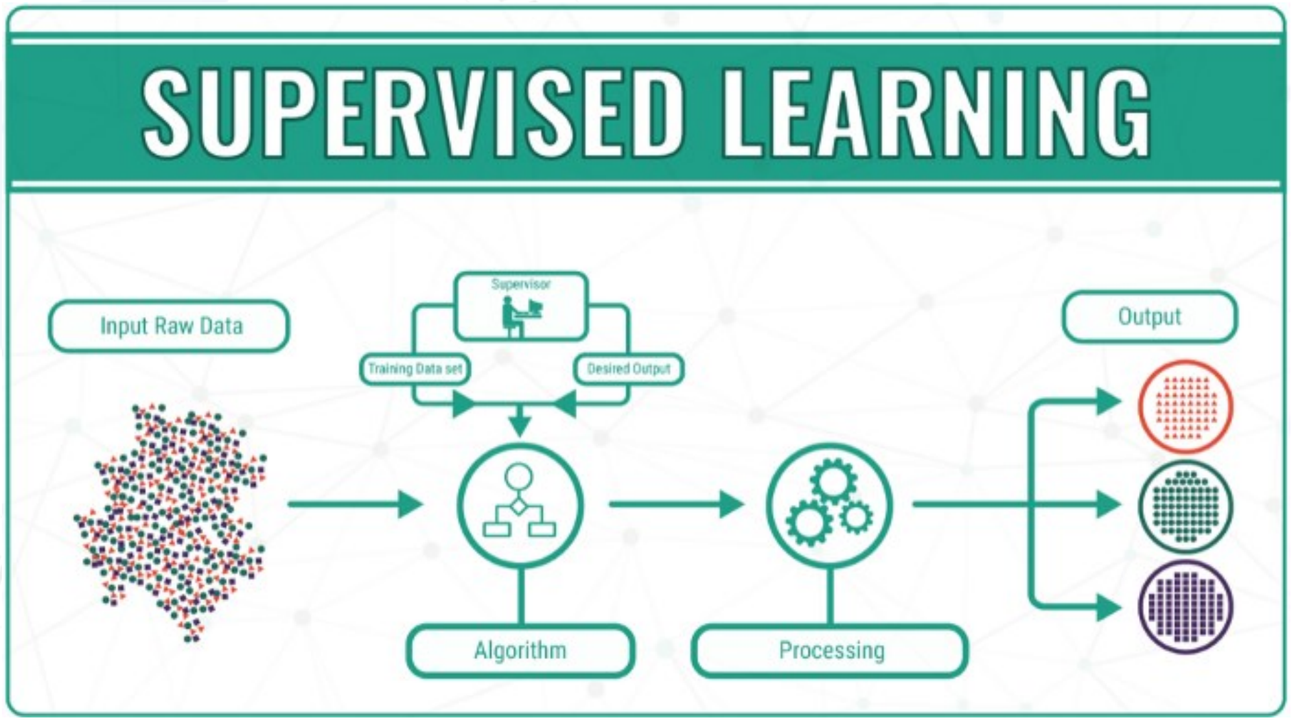
Types of machine learning



https://towardsdatascience.com/machine-learning-types-2-c1291d4f04b1

Supervised Learning

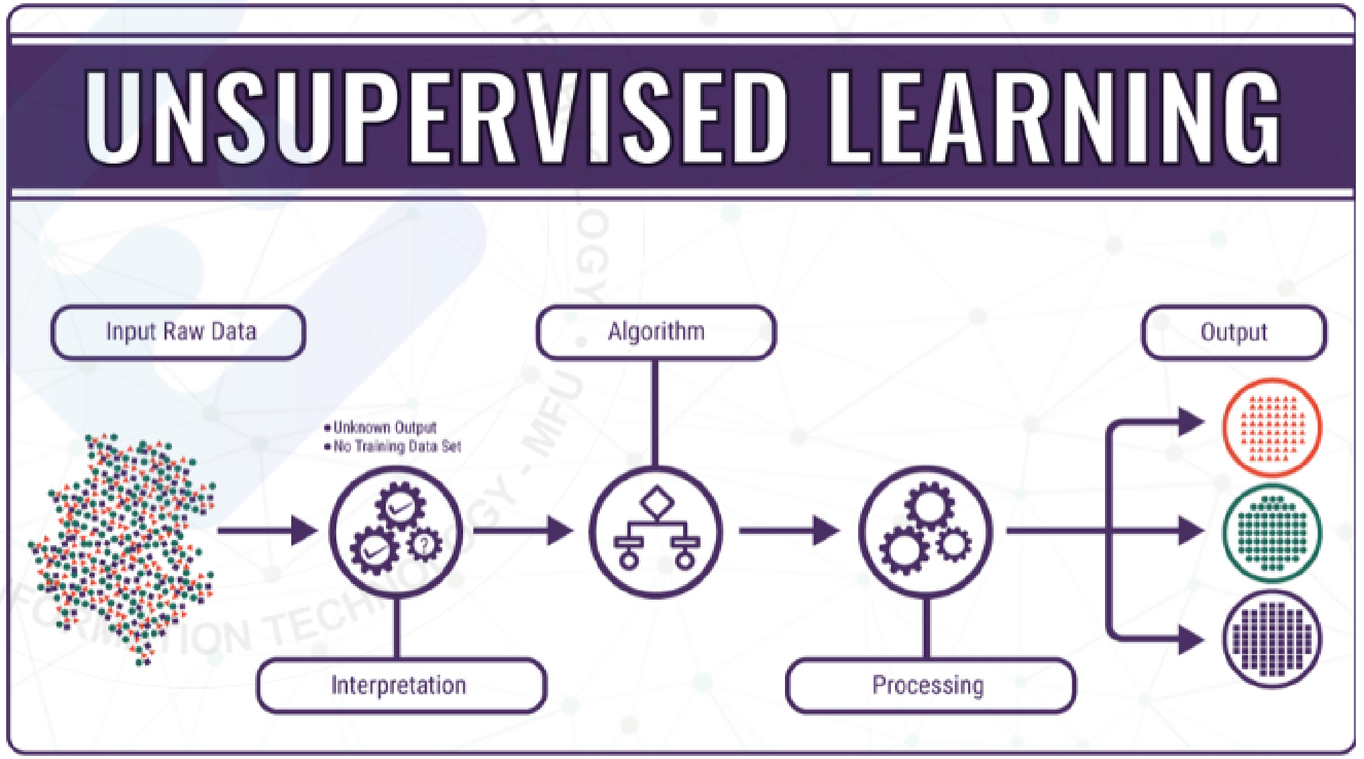
Supervised Learning is learning with a supervisor by using data to help technology predict outcomes more accurately.



https://chisoftware.medium.com/supervised-vs-unsupervised-machine-learning-7f26118d5ee6

Unsupervised Learning

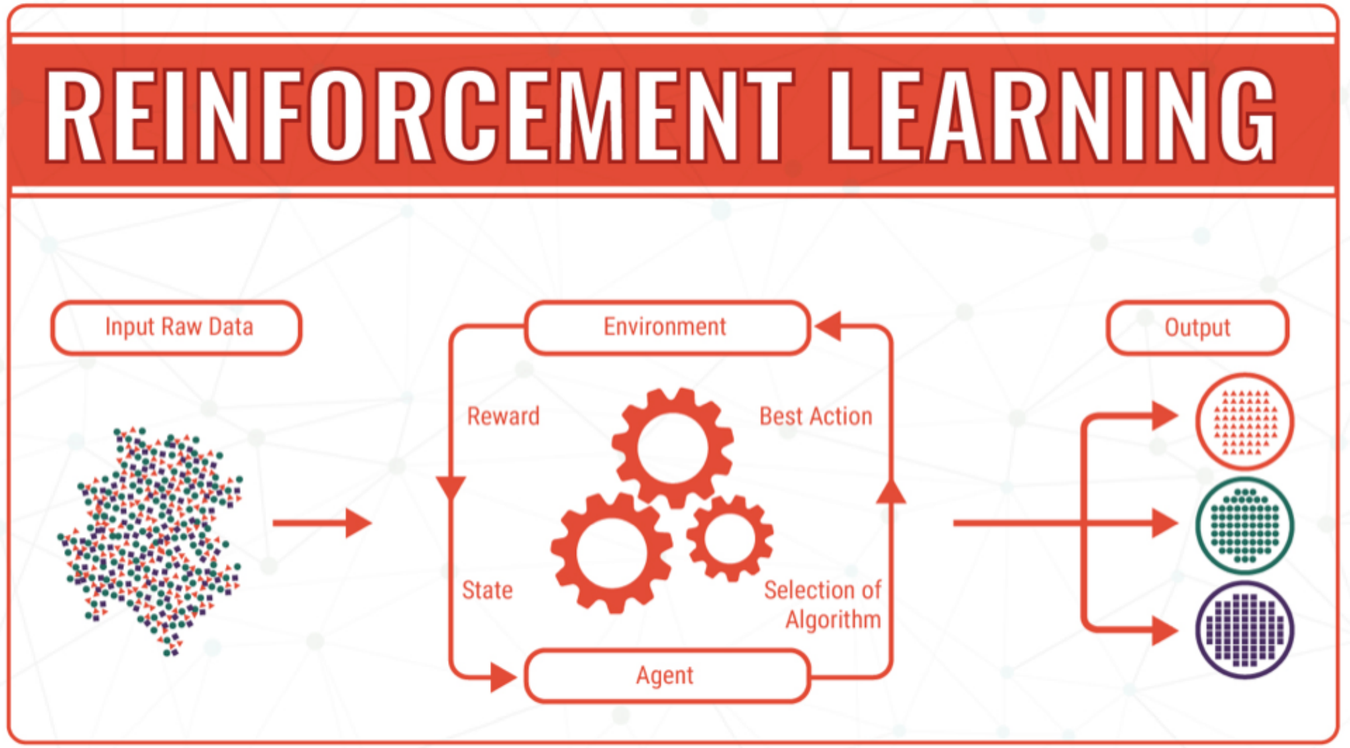
Unsupervised Learning is the opposite of Supervised Learning. It does not need to be taught from data. Unsupervised Learning can learn by itself



https://chisoftware.medium.com/supervised-vs-unsupervised-machine-learning-7f26118d5ee6

Reinforcement Learning

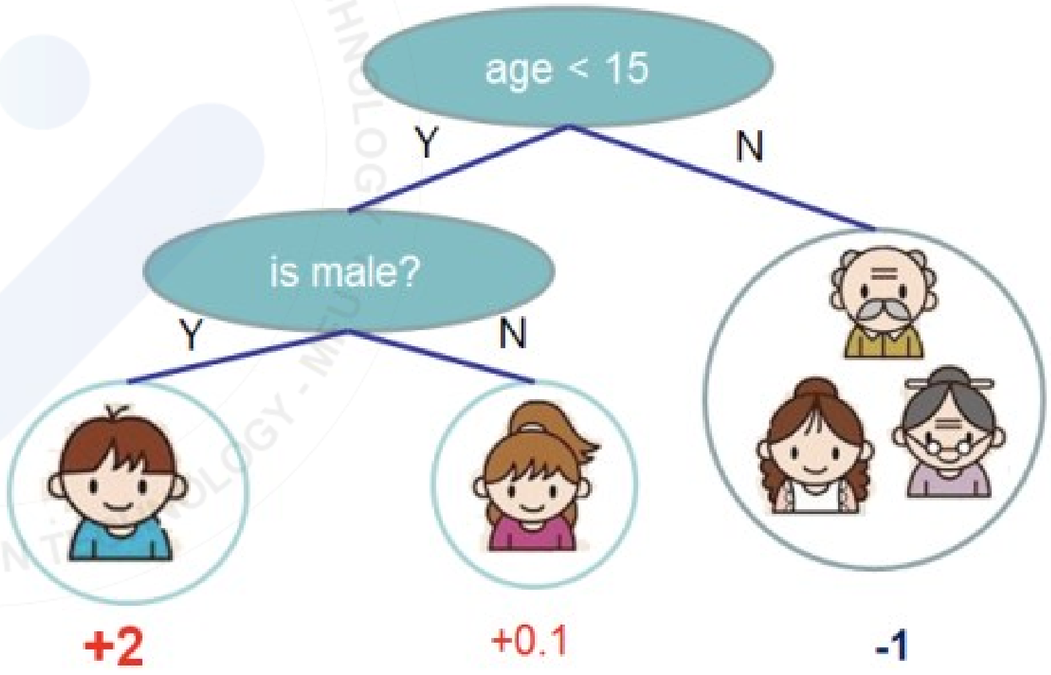
Reinforcement Learning is when the machine will learn that changes according to the conditions which can be learned on its own without the need for teaching information. Reinforcement Learning is very interesting because it is the closest thing to a human-like system or artificial intelligence (AI).



http://www.sra.vjti.info/blog/machine-learning/introduction-to-reinforcement-learning-in-2-minutes

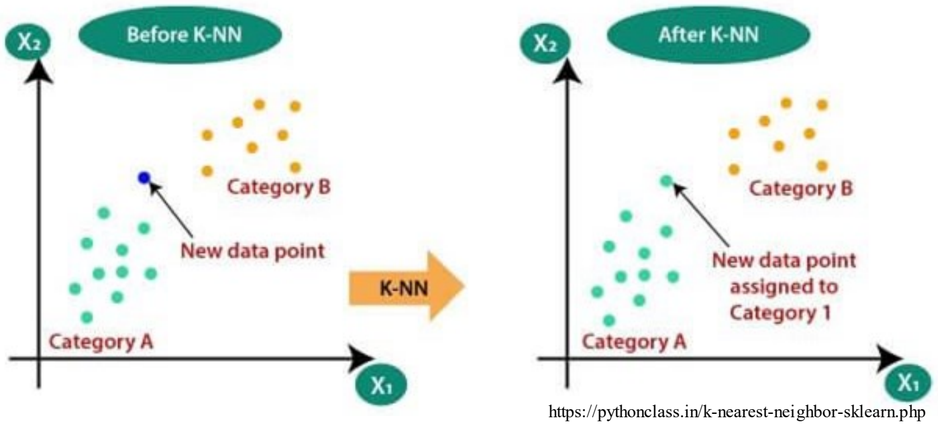
Supervised Learning Example

Decision Tree is a tree used to support decision making. It looks like an upside-down tree structure with roots at the top and leaves at the bottom. Within the tree there are nodes, each of which represents a decision based on data on various properties. Semi of the tree reaches the value or result obtained from the test. The leaves at the bottom of the decision tree represent the class or result at the top, called the root node.



Supervised Learning Example

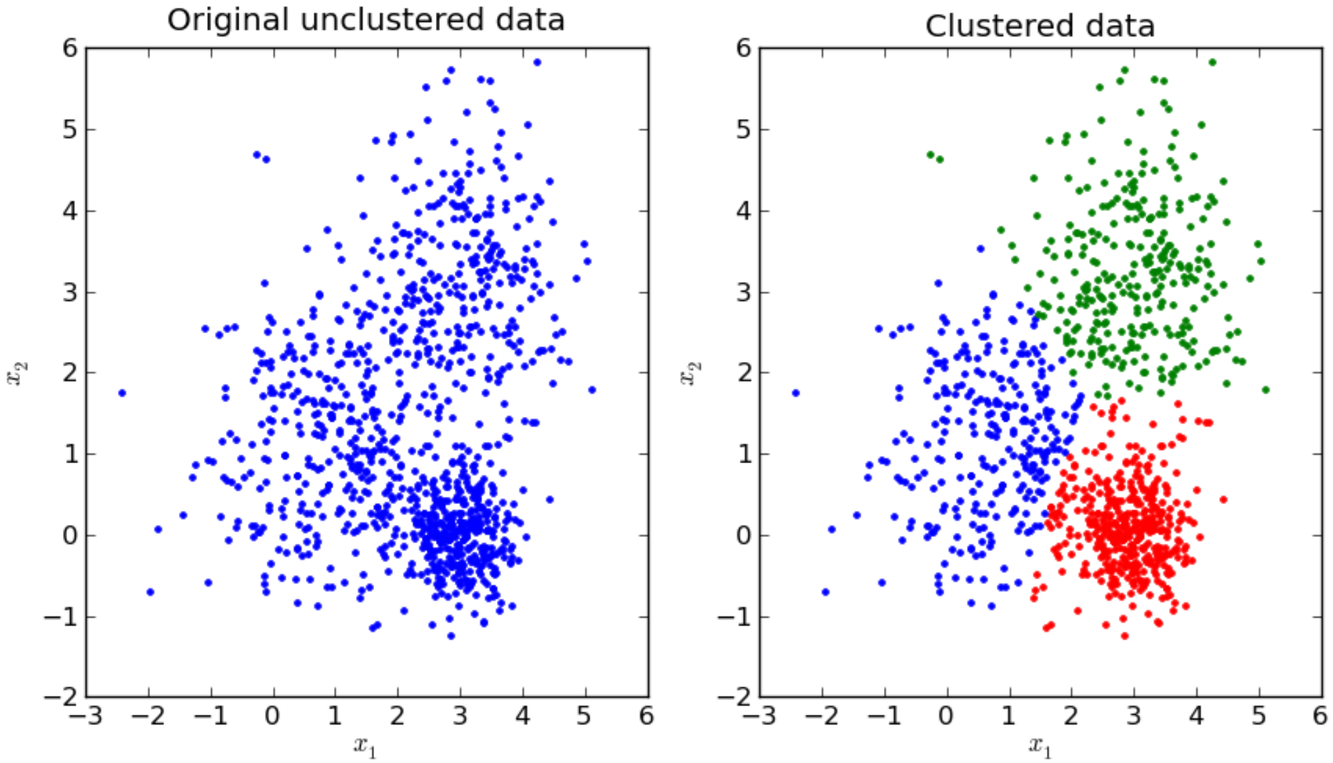
K-Nearest Neighbors (K-NN) is a method used for classification by using the principle of comparing data of interest with other data that are similar. If the data you are interested in is closest to any data, the system will give an answer that is the same as the answer for the closest data. The behavior does not use training data to build the model, but uses this data as a model.



https://pythonclass.in/k-nearest-neighbor-sklearn.php

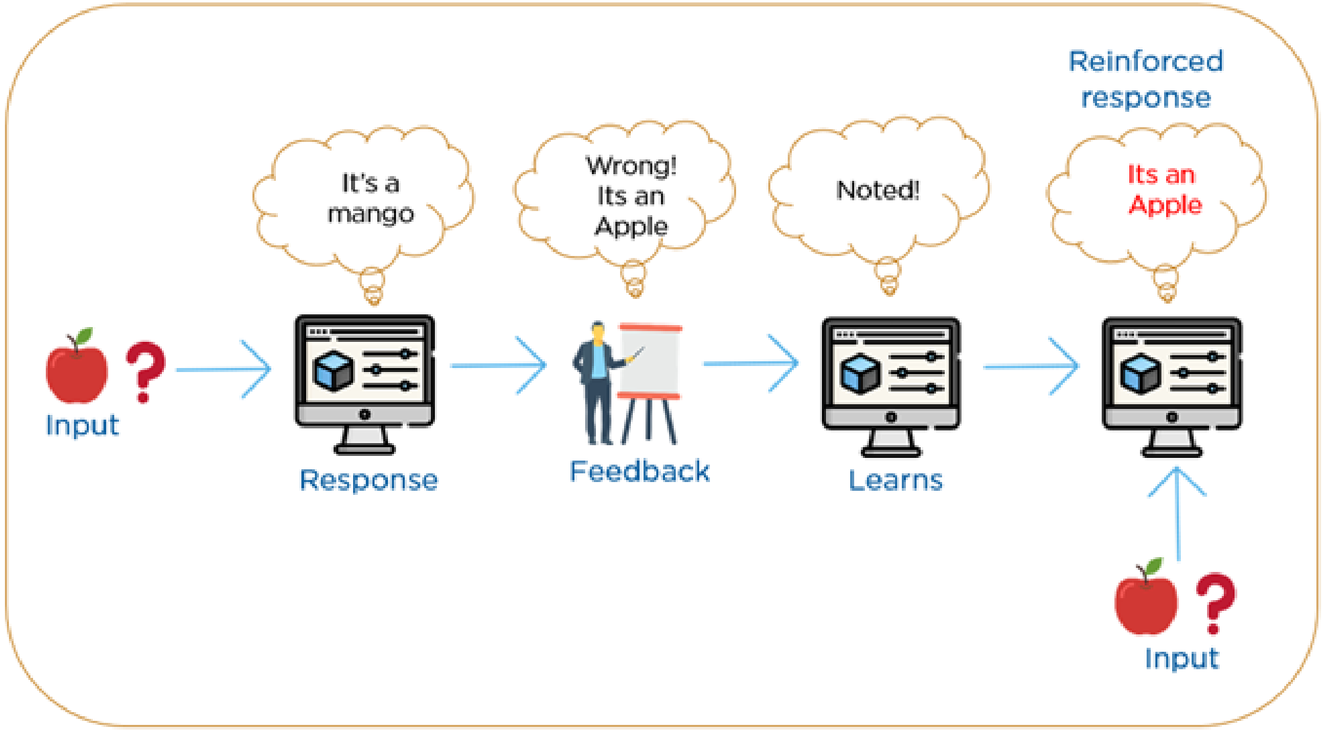
Unsupervised Learning Example

K-means or k-means data grouping is a method for managing data (Data mining) in the group of Unsupervised Learning or learning without teaching. The main function of K-means is clustering. This type of grouping is based on statistics. Of course, there must be at least 2 or more numbers involved.



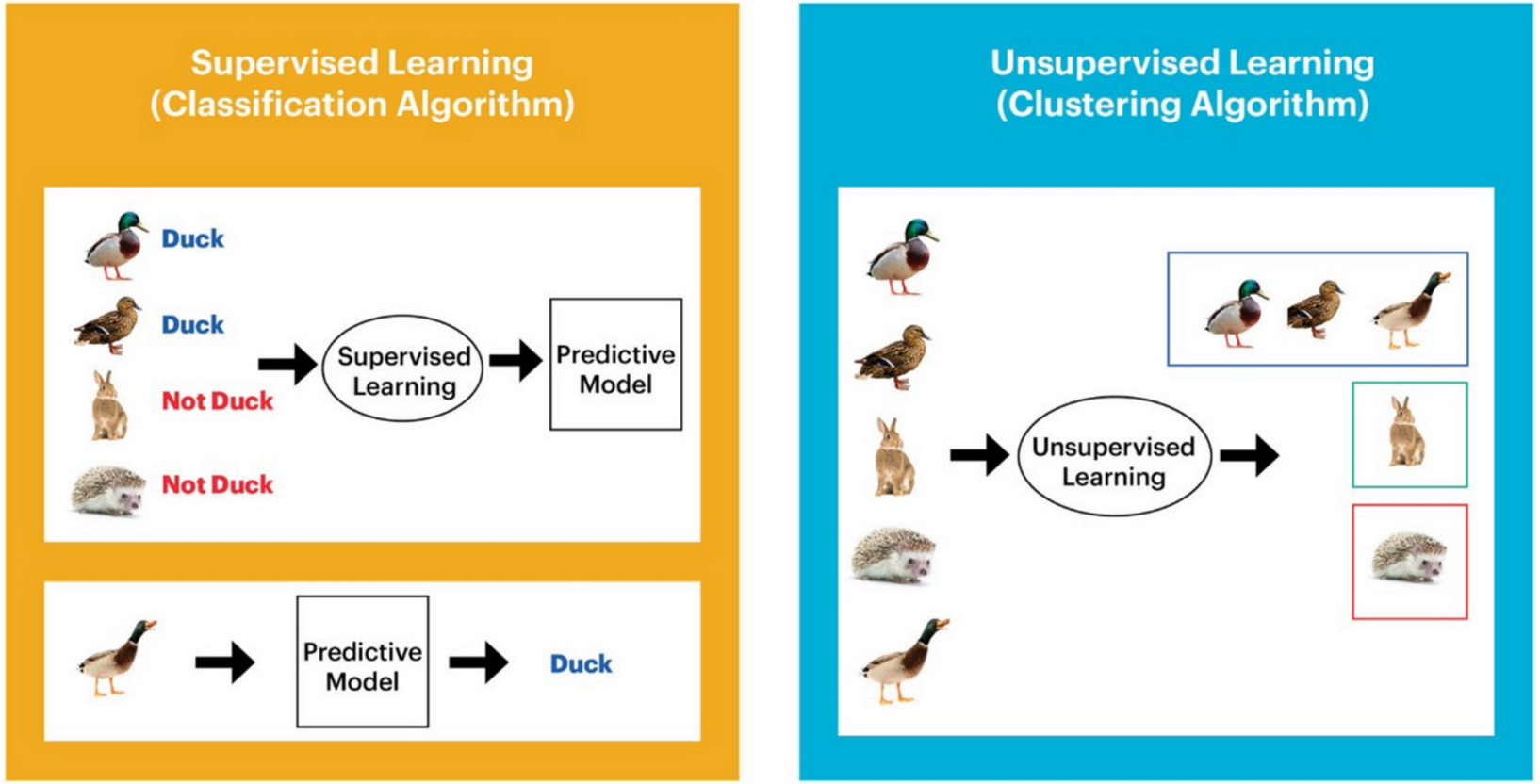
https://towardsdatascience.com/k-means-data-clustering-bce3335d2203

Reinforcement Example



https://blog.pjjop.org/intro-to-ai-machine-learning-and-ai-tool/

Compare the differences between Supervised Learning and Unsupervised Learning



Western Digital.

https://blog.pjjop.org/intro-to-ai-machine-learning-and-ai-tool/

Examples of Machine Learning in everyday life

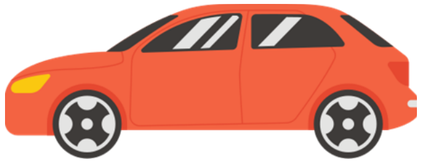
- Apple Siri

https://www.pngwing.com/en/free-png-keslk

- Apple Face ID

https://icon-library.com/icon/googlemaps-icon-16.html

- Electric Vehicle



https://www.seekpng.com/ipng/u2w7i1y3i1i1o0o0_fraud-detection-icon-png/

- Digital Marketing

https://www.flaticon.com/free-icon/online-advertising_1466288