Machine learning

INSIDE

—

What is Ml ?

Introduction to Machine Learning

—

Why use Ml ?

The importance of learning the machine

—

Type of Ml :

A quick overview of each type

—

Ml from my point of view:

—

Idea using Ml?

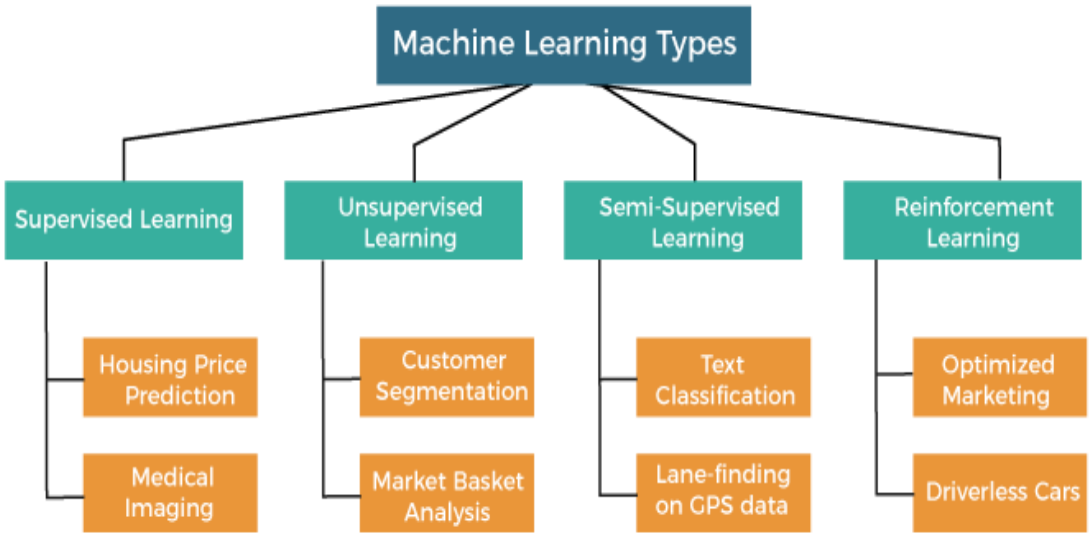
What is Ml ?

–Tom Mitchell,1997

“A computer program is said to learn from experience E with respect to some task T and some performance measure P, if its performance on T, as measured by P, improves with experience E.”

Why use machine learning?

_ Machine learning is growing in importance due to increasingly enormous volumes and variety of data, the access and affordability of computational power, and the availability of high speed Internet. These dijital transformation factors make it possible for one to rapidly and automatically develop models that can quickly and accurately analyze extraordinarily large and complex data sets. There are a multitude of use cases that machine learning can be applied to in order to cut costs, mitigate risks, and improve overall quality of life including recommending products/services, detecting cybersecurity breaches, and enabling self-driving cars. With greater access to data and computation power, machine learning is becoming more ubiquitous every day and will soon be integrated into many facets of human life.



Type of machine learning ?

ML systems can be classified according to the amount and type ofsupervision they get during training. There are many categories, but we'lldiscuss the main ones: supervised learning, unsupervised learning, self-supervised learning, semi-supervised learning, and Reinforcement Learning .

Supervised learning

In supervised learning, the training set you feed to the algorithm includes the desired solutions, called labels .

Unsupervised learning

In unsupervised learning, as you might guess, the training data is unlabeled The system tries to learn without a teacher.

Semi-supervised learning

Since labeling data is usually time-consuming and costly, you will oftenhave plenty of unlabeled instances, and few labeled instances. Some algorithms can deal with data that's partially labeled. This is called semi-supervised learning .

Reinforcement Learning is a very different beast. The learning system, called an agent in this context, can observe the environment, select and perform actions, and get rewards in return (or penalties in the form of negative rewards, It must then learn by itself what is the best strategy, called a policy, to get the most reward over time. A

policy defines

Machine learning from my point of view :

“Learning is any process by which a system improves performance from experience.”- Herbert Simon Definition by Tom Mitchell (1998): Machine Learning is the study of algorithms that • improve their performance P • at some task T • with experience E.

A well-defined learning task is given by <P,T,E>

_ machine learning is about predicting the future based on the past

_ machine learning is about predicting the unseen based on the already seen

Idea using Machine learning?

Sentiment Analysis

Sentiment analysis is one of the most necessary applications of machine learning. Sentiment analysis is a real-time machine learning application that

determines the emotion or opinion of the speaker or the writer

. For instance, if someone has written a review

or email (or any form of a document), a sentiment analyzer will instantly

find out the actual thought and tone of the text.

This sentiment analysis application can be used to analyze a review based website

decision-making applications, etc