


Wrok-1

what is Machine learning:-

Field of study that gives computers the ability to learn without being explicitly programmed.

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

E - watching you label emails as spam or not spam

T - classifying emails as spam or not spam

P - The number (or fraction) of emails correctly classified as spam | not spam

Machine learning algorithms:

1. Supervised learning.

2. Unsupervised learning.

Others:- Reinforcement learning,
recommender system

Supervised learning:-

"right answers" given

In supervised learning, we are given a data set and already know what our correct output should look like, having the idea that there is a relationship between the input and the output.

There are 2 categories:-

1. regression problem

2. classification problem

Regression problem:- In regression problem we are trying to predict results ~~that~~ within a continuous output. (House price prediction)

Classification problem:- In classification problem, we are trying to predict results within a discrete output (Tumor stage).

Unsupervised learning:-

Unsupervised learning allows us to approach problem with little or no idea what our result should look like. we can derive structure from data where we don't necessarily know the effect of its variables.

— clustering problem:-

— Non-clustering problem:-

Clustering Problem:- we can derive structure by clustering the data based on relationship among its variables in data.

Ex:- news link in google.

Non clustering problem:-

The cocktail-party algorithm, allows us to find a way to structure in a chaotic environment ("identifying individual voices and music from a mesh of soundscapes")

Ex

Model and cost function-