- Supervised vs Unsupervised Learning.
- categorical vs continious features.
- Regression vs classification.
- Bias vs Variance
- Generalization performance (of a Learning algorithm).

Supervised Learning :

Training examples → Input — Target values or output

unsupervised Learning

Training examples → only Inputs.

Kinds of Features :- categorical (Finite class) vs continuous (∞ class).

- Finite number of categories classes
  e.g. Gender (Male/Female)
  e.g. Age group etc.
- Infinite numer of values.
  e.g. price of a house/car/
  age of a person.

***Types of supervised Learning :- Regression & classification**

1. Output/Target continious
   Ex: certain Features of a car → predict → Price of a car
2. Output/Target categorical/Discrete
   Ex: Image of a tumor → predict → cancerous/noncancerous

***Bias vs Variance :**

Bias — Erroreneous assumptions in the learning algorithms

Variance — Model sensitivity towards NOISE rather than important relations between input and output (or important properties of features).

	# Of features	# of parameters	# of training examples
Bias	decrease	decrease	Remain Same
Variance	Increase	Increase	Decrease

Generalization :