# 1강: Introduction

## What is machine learning?

1. Arthur Samuel : Field of study that gives computers the **ability to learn without being explicitly programmed** (패턴을 학습하는 것 ; learning pattern)
   예) Checkers program - learn pattern

2. Tom Mitchell : learn from **experience *E*** with respect to some **task *T*** and some performance on **measure *P***, if its performace on T, as measured by P, improves with E
   ( = 경험과 지표를 이용한 평가를 통해 학습하는 것)

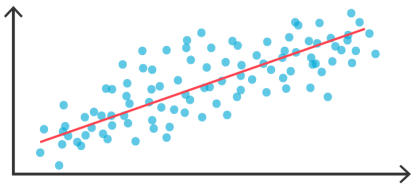
예)

- *E* : plays tons of chess games by itself ( computer) ← 학습(적합)의 과정
- *T* : tasks of playing checkers ← 평가의 과정
- *P* : chance of program winning the next game of checkers it plays aganinst the next opponent ← 체스를 이길 확률 , 즉 평가의 지표가 됨

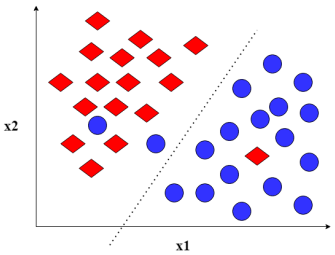
## Variety of tools in ML

1. **supervised learning** : 데이터셋 X와 레이블 값 Y 가 주어질 때 → mapping X & Y
- mapping : many possible ways exist ; either automatically or manual intervention
- most widely used

| ① "***Regression***" (회귀) | ② "***Classification***" (분류) |
|---|---|
| : Y 값 continuous | : Y 값 discrete numbers of variables |



estimating/predicting price of a house




malignant or not

2. **Machine Learning Strategy [ Learning Theory ]** ; optimize, run faster

3. **Deep Learning (CS230)**

4. **Unsupervised Learning** : dataset with no labels 예) K-means clustering