ML/DS 지식 따라가기

Regression / Classification / Clustering

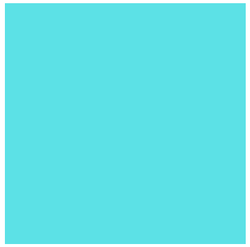
REGRESSION / CLASSIFICATION / CLUSTERING

Basic Learning Algorithm

Data +  = 결과물

REGRESSION / CLASSIFICATION / CLUSTERING

Basic Learning Algorithm



의 종류

(1) Regression

(2) Classification

(3) Clustering

REGRESSION / CLASSIFICATION / CLUSTERING

Basic Learning Algorithm

A. 지도 학습

답이 존재하는 데이터를 학습

손 크기	몸무게	**키**
16	70	165
22	95	182
19	64	???

B. 비지도 학습

답이 존재하지 않는 데이터를 학습

손 크기	몸무게	**성별**
16	70	???
22	95	???
19	64	???

REGRESSION / CLASSIFICATION / CLUSTERING

Basic Learning Algorithm

A. 지도 학습

대표적인 알고리즘

Regression (회귀)

Classification (분류)

B. 비지도 학습

대표적인 알고리즘

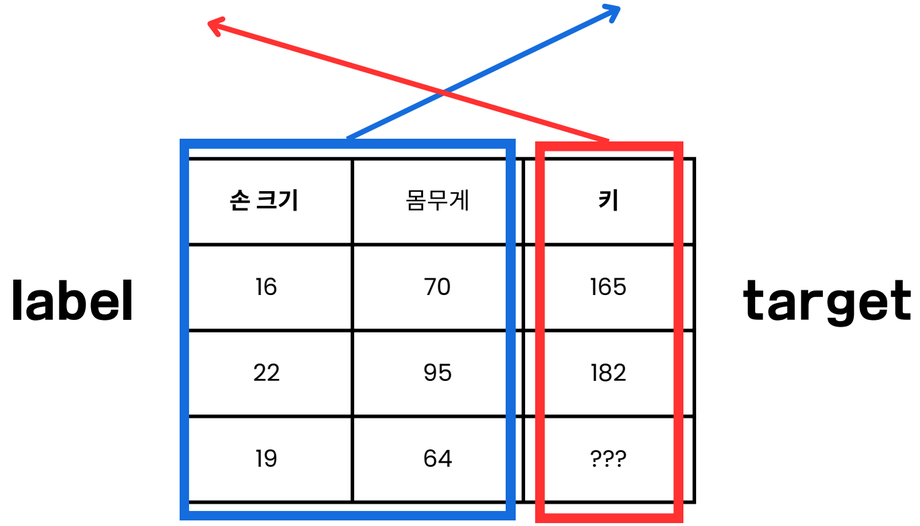
Clustering (군집화)

REGRESSION / CLASSIFICATION / CLUSTERING

Basic Learning Algorithm

Regression

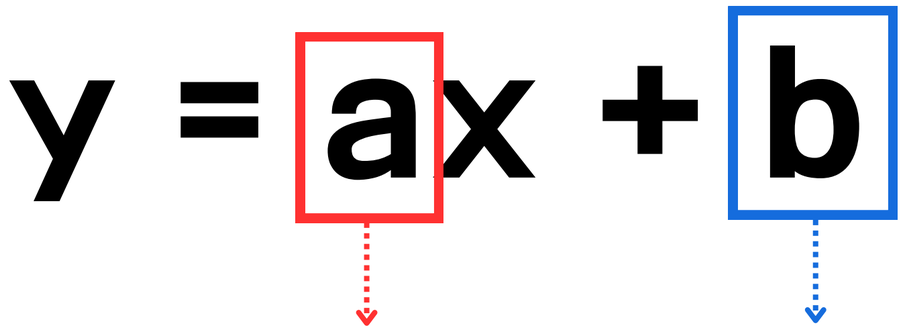
$$y = ax + b$$



REGRESSION / CLASSIFICATION / CLUSTERING

Basic Learning Algorithm

Regression



w 라고
표기하기도 함

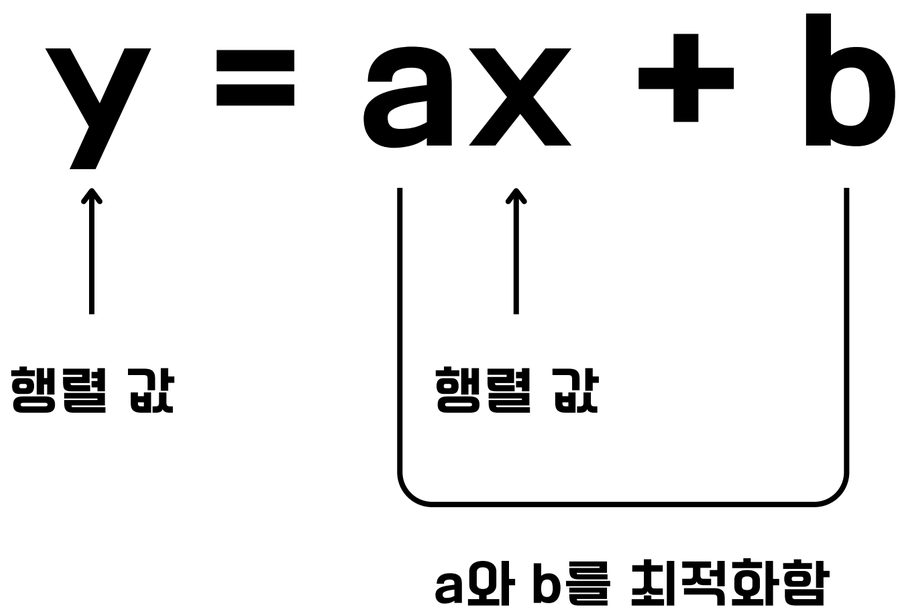
Weight
(가중치)

bias
(편향)

REGRESSION / CLASSIFICATION / CLUSTERING

Basic Learning Algorithm

Regression



REGRESSION / CLASSIFICATION / CLUSTERING

Basic Learning Algorithm

Regression

(1) Linear Regression

(2) Multiple Linear Regression

(3) Logistic Regression

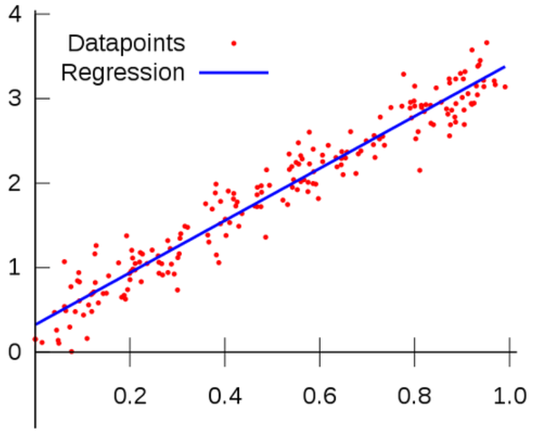
REGRESSION / CLASSIFICATION / CLUSTERING

Basic Learning Algorithm

Regression

(1) Linear Regression

$$y = ax + b$$



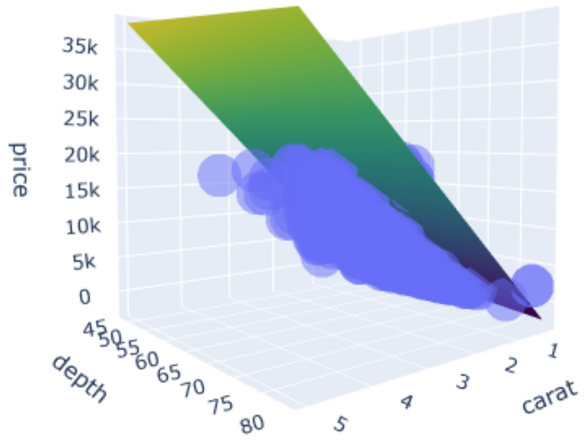
REGRESSION / CLASSIFICATION / CLUSTERING

Basic Learning Algorithm

Regression

(2) Multiple Linear Regression

$$y = a1x1 + a2x2 + \ldots + b$$



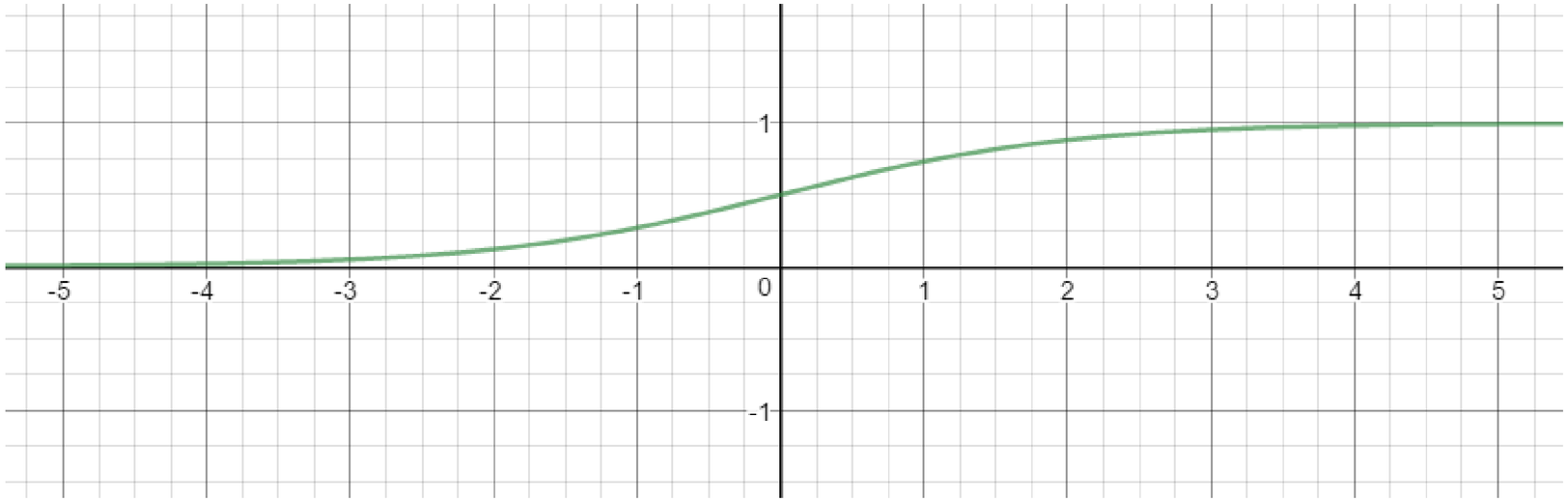
REGRESSION / CLASSIFICATION / CLUSTERING

Basic Learning Algorithm

Regression

(3) Logistic Regression

$$y = \frac{1}{1 + e^{-x}}$$

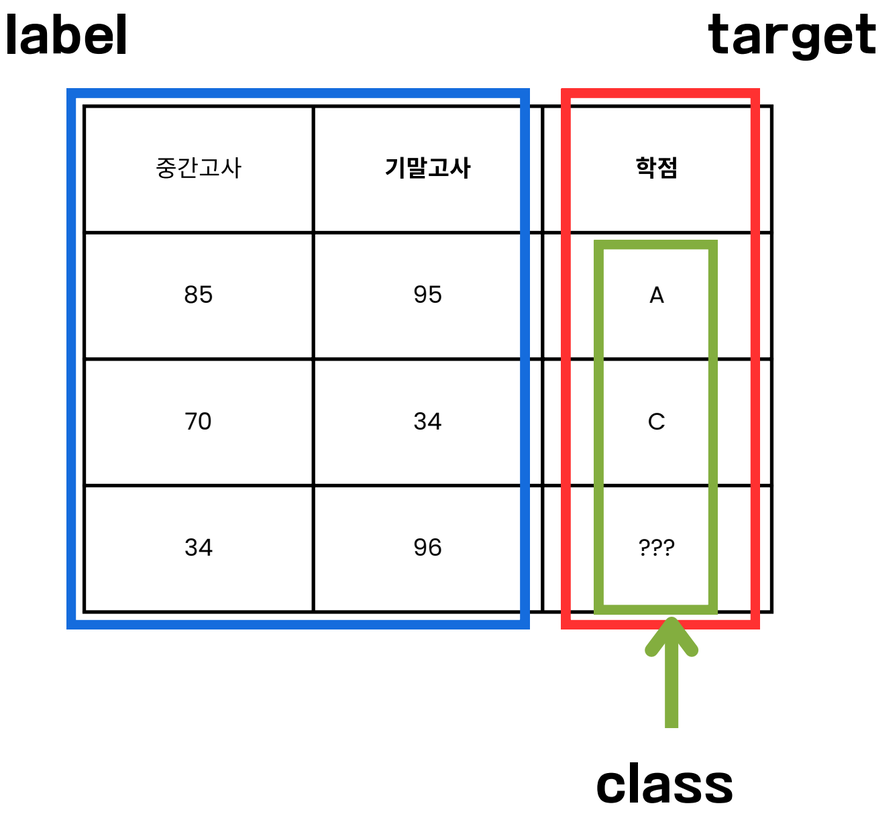


범주형

REGRESSION / CLASSIFICATION / CLUSTERING

Basic Learning Algorithm

Classification



REGRESSION / CLASSIFICATION / CLUSTERING

Basic Learning Algorithm

Classification

(1) Binary Classification

(2) Muti-Class Classification

(3) Muti-Label Classification

REGRESSION / CLASSIFICATION / CLUSTERING

Basic Learning Algorithm

Classification

(1) Binary Classification

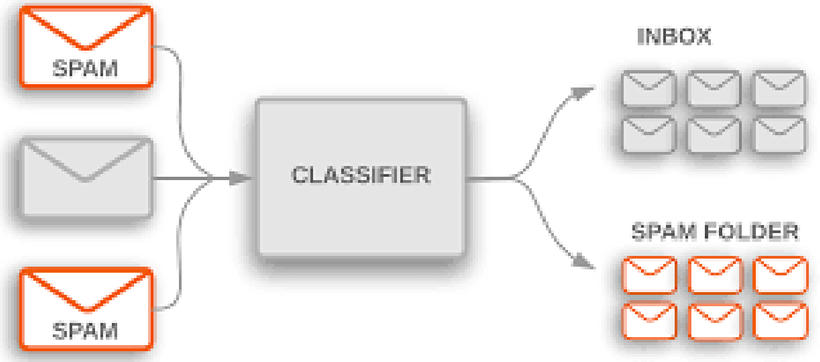
클래스가 2가지인 classification

ex)

개인지 고양이인지 구분하는 모델

맞는지 틀린지 확인해주는 모델

스팸인지 아닌지 구분하는 모델



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Basic Learning Algorithm

Classification

(2) Muti-Class Classification

클래스가 3가지 이상인 classification

ex)

무슨 언어인지 구분하는 모델

카카오의 감성 분석 모델

REGRESSION / CLASSIFICATION / CLUSTERING

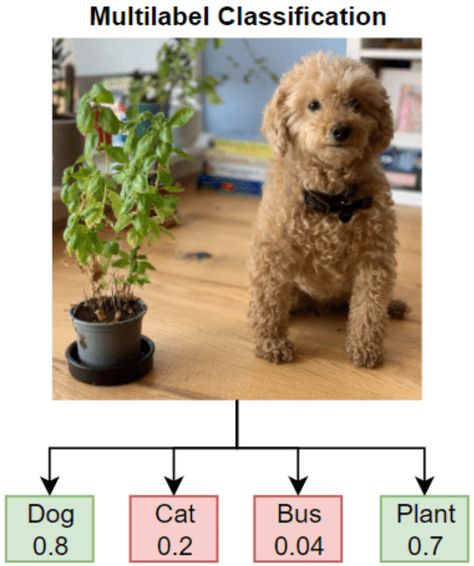
Basic Learning Algorithm

Classification

(3) Muti-Label Classification

target이 2가지 이상인 classification

ex)



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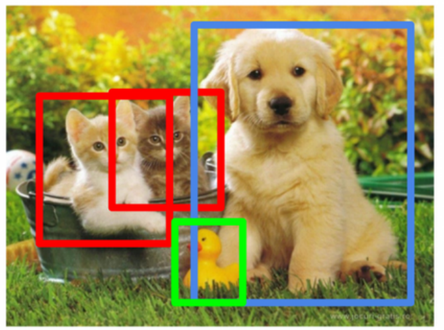
Basic Learning Algorithm

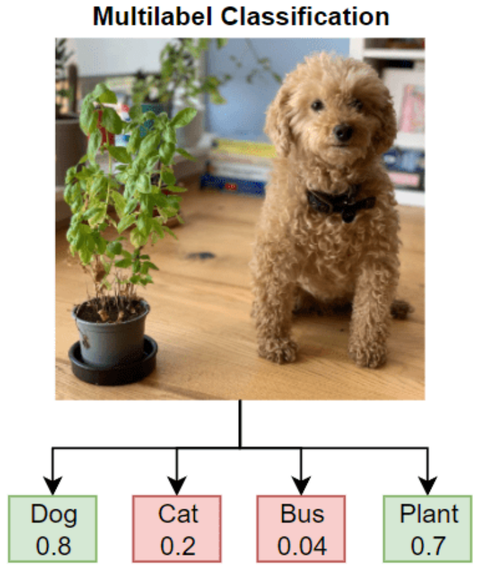
Classification

(3) Muti-Label Classification

target이 2가지 이상인 classification

ex)





REGRESSION / CLASSIFICATION / CLUSTERING

Basic Learning Algorithm

Clustering

label

수학 성적	**기말고사**
85	95
70	34
34	96

NO TARGET COLUMN

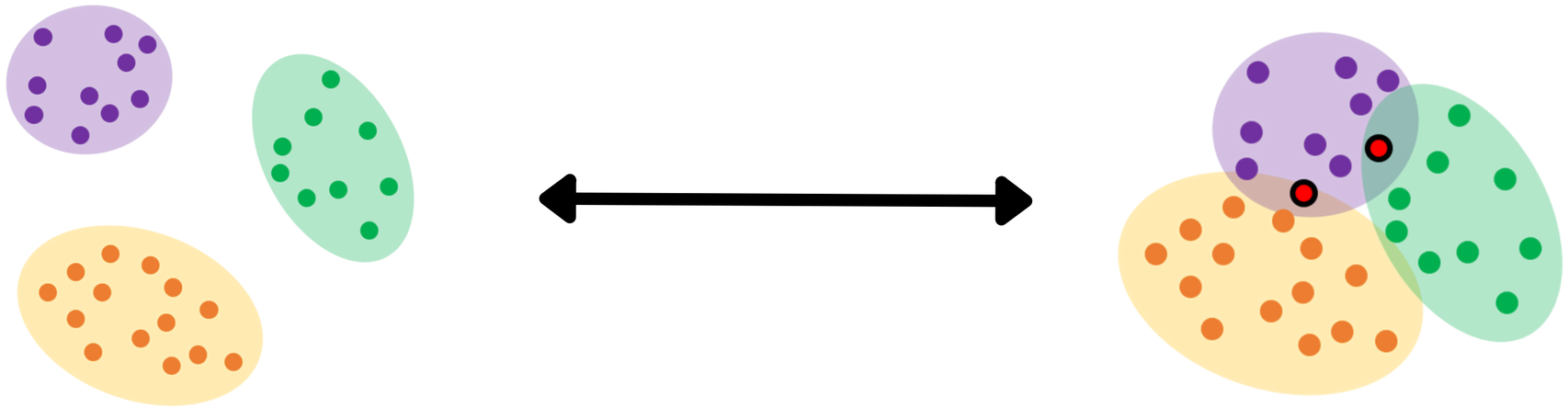
REGRESSION / CLASSIFICATION / CLUSTERING

Basic Learning Algorithm

Clustering

Hard Clustering

Soft Clustering

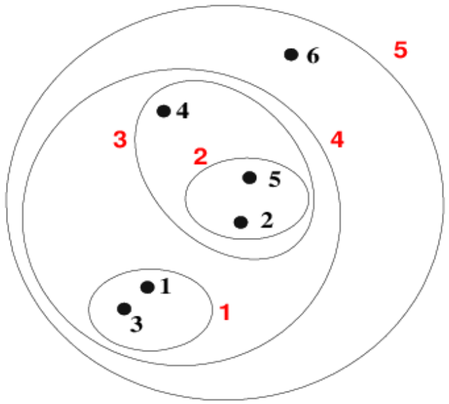


REGRESSION / CLASSIFICATION / CLUSTERING

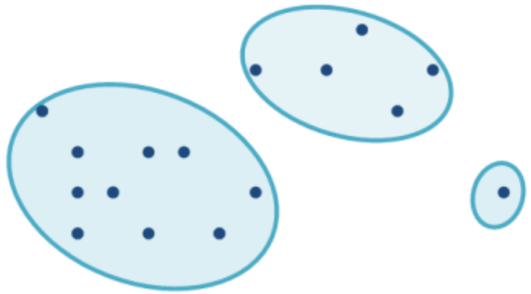
Basic Learning Algorithm

Clustering

Hierarchical Clustering



Partitional Clustering

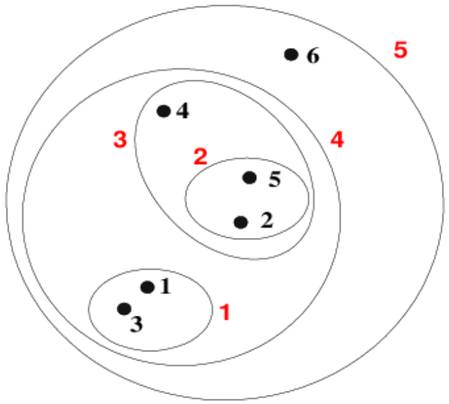


REGRESSION / CLASSIFICATION / CLUSTERING

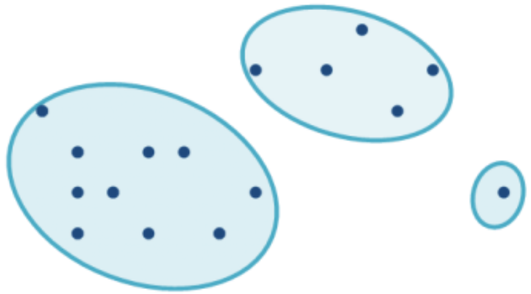
Basic Learning Algorithm

Clustering

Hierarchical Clustering



Partitional Clustering



Thank you