

07-01-2022

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	n_1	n_2	y	<u>Mapping func.</u>
1	12	6	yes	$n_1 > n_2$
2	10	7	no	$n_1 > n_2 \text{ AND } n_1 / n_2 = 2$
3	20	14	yes	$n_1 > n_2 \text{ AND } \text{lcm}(n_1, n_2) = 2$

Classes of Supervised

→ Regression

"Predict continuous no." / Real Valued no.

↓
Output eg: extraction of
 dengue cases
 ↗ Predict

→ Classification : Predict Categorical data

eg: 0, 1
 or high, moderate, low

Supervised:

Linear Reg, Logistic Reg, Naïve Bayes, K nearest Neighbors,

Decision Trees, SVM

Problem / Challenge
↓
- Training a large dataset bcz of labelled data
- Computational time

Higher Accuracy

Un Supervised : No labelled data; hence large amt. can be

UnSupervised: No labelled data; hence large amt. can be used

→ meaningful relations, patterns, similarities

→ Groupings - similar objects → Clusters] Clustering

Associations → discover rules

Reinforcement Learning - No fixed training dataset

Agent actions → Penalised
or
→ Rewarded

Semi Supervised → Some data: labelled
Some: Not labelled

However, Unlabelled >> Labelled

Also, some unlabelled shifted to Labelled if \downarrow \uparrow accuracy

Humans:

1.) Rule Learning (memory)

2.) Passive " (from Teacher/Liberator)

3.) Analogy (Past Experience)

4.) Inductive (Past " → formulate a generalised concept)

5.) Trial & Error (New facts from past facts)

1.) Inductive

5.) Deductive

(New facts from past facts)
↓
Derive

Sky	Temp	Humid	Wind	Water	Forecst	EnjoySpt
Sunny	Warm	Normal	Strong	Warm	Same	Yes
Sunny	Warm	High	Strong	Warm	Same	Yes
Rainy	Cold	High	Strong	Warm	Change	No
Sunny	Warm	High	Strong	Cool	Change	Yes

↓

6 i/p vars

Various concepts — Enjoy spot?
— sleep in those weather?
— work .. ?

Concept → a boolean valued function defined over
a large set of objects / events

Concept learning — inferring this bool. valued func. w/ the
Training data / er.

Target Concept → func. / concept that we want to learn
denoted by 'c'

$$c: x \rightarrow \{0,1\}$$