

Deep Learning Ch1

... allow computers to learn from experience by understanding the world as an hierarchy of concepts. If we draw graph showing the dependencies between these concepts, this graph is deep, with many layers, thus deep learning

DEF AI systems need the ability of acquiring their own knowledge by extracting patterns from raw data. This capability is known as machine learning.

↓
logistic regression *
naive Bayes

! The performance of these simple ML algorithms depends heavily on the representation of the data they are given.

DEF Each piece of information included in the representation of the phenomenon (eg person) is called feature

OR.

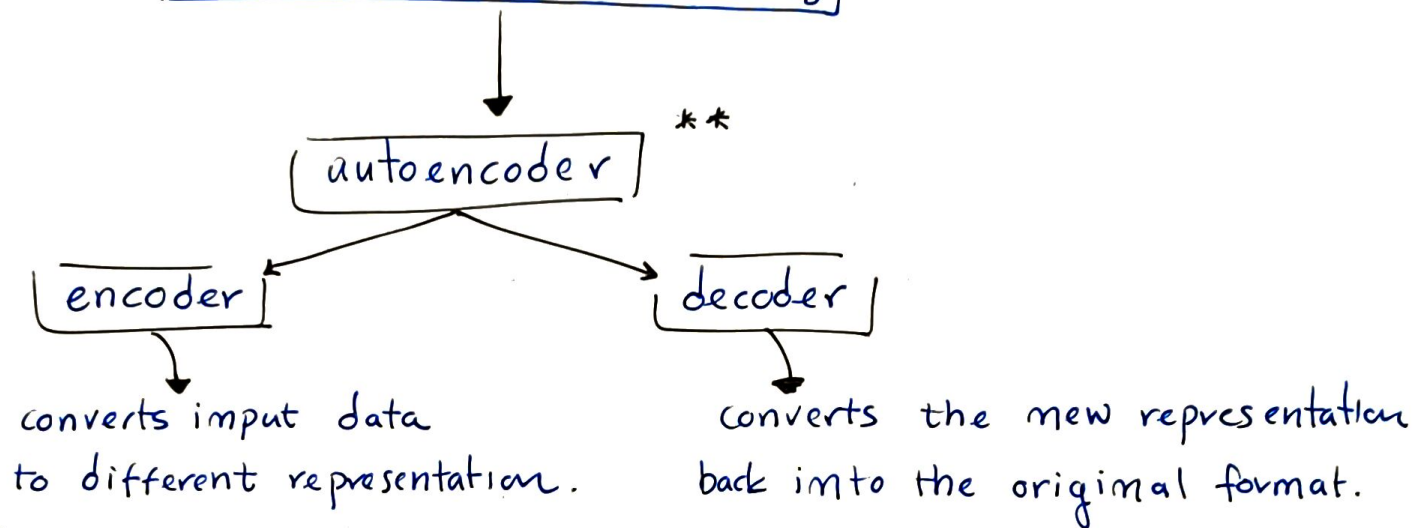
Feature is an individual property or characteristic of a phenomenon.

Legend

BLACK : helping (drawing, boxes etc.)
BLUE : main text
GREEN : formulas
RED : Attention points

DEF

... ML CAN BE USED TO DISCOVER THE PROPER REPRESENTATION OF DATA. THIS IS CALLED REPRESENTATION LEARNING.



*, **
PROGRAMMING BASED ON WHAT WE LEARNED SO FAR

1. LINEAR REGRESSION
2. NAIVE BAYES
3. AUTOENCODER

EXERCISE

PROGRAM ABOVE FROM SCRATCH IN PYTHON.

——||—— USING PYTHON LIBRARY.

TO KEEP

- MLE is very important
- Python DataFrame needs clear understanding on what are the data types below.

Def

Factors of variation are the underlying causes in the dataset that account for differences in the features and observed outcomes.

example

angle of view, light intensity etc.

Importance in ML

1. Model generalization
2. Feature engineering
3. Data Augmentation.