

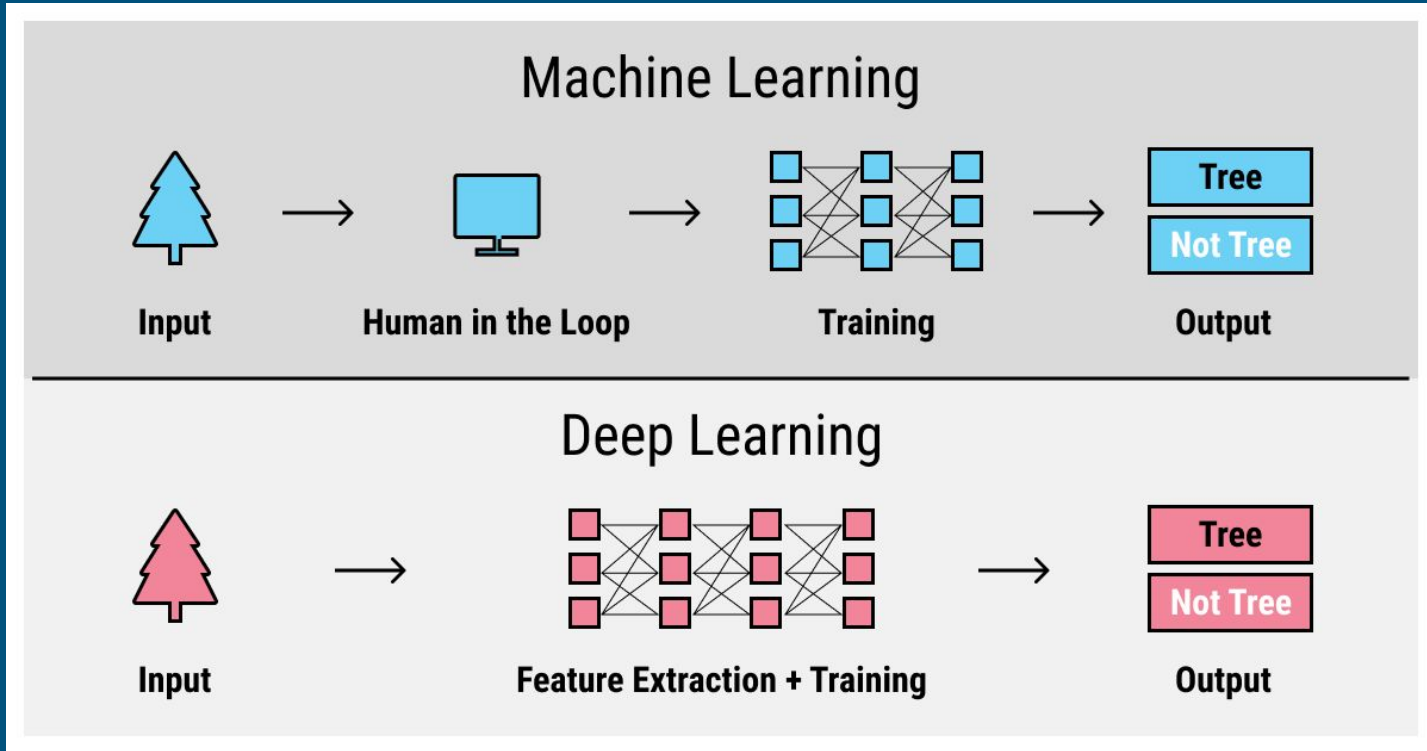


Machine Learning

Dr. Dongchul Kim

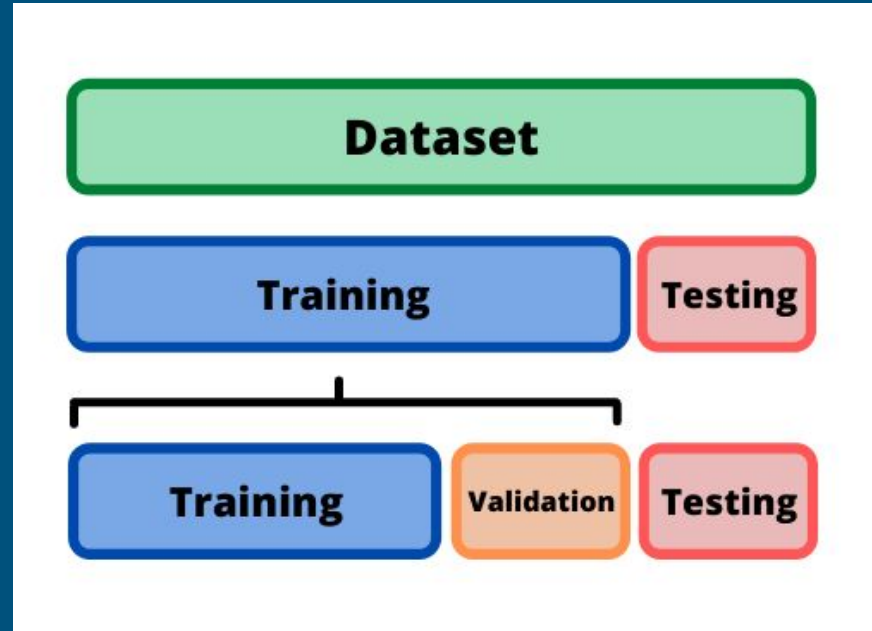


Machine Learning



Data

- Example
 - <https://archive.ics.uci.edu/>
- Train and Test
- Feature and Sample



Types of Learnings

01

Supervised learning

- you are given examples with correct labels and are asked to label new examples

02

Unsupervised learning

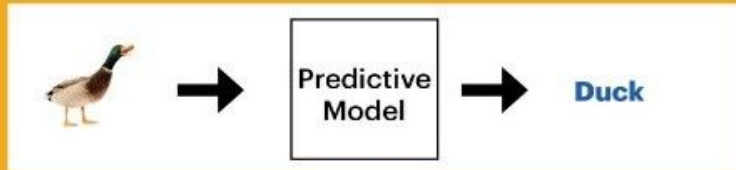
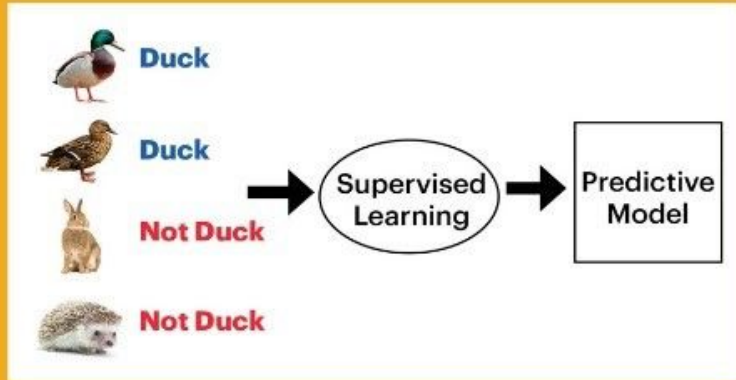
- you are given only unlabeled examples

03

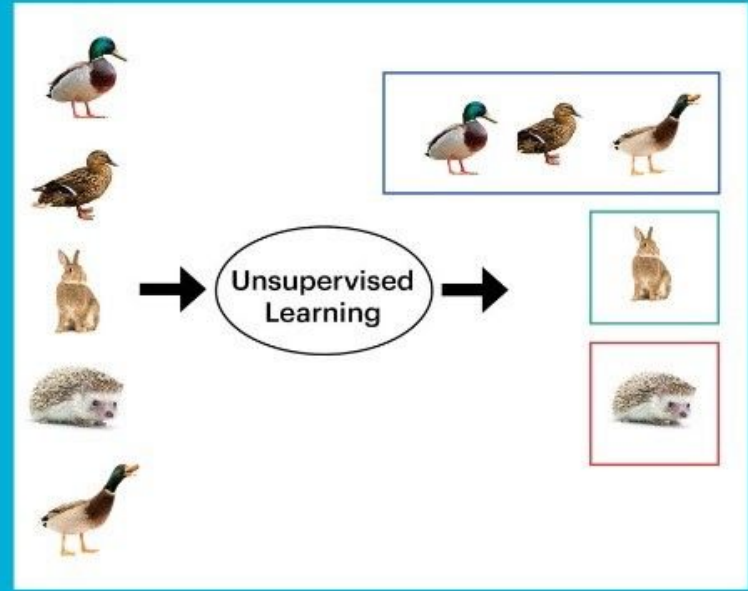
Reinforcement learning

- you are given the overall performance (as opposed to labels to particular examples)

Supervised Learning (Classification Algorithm)



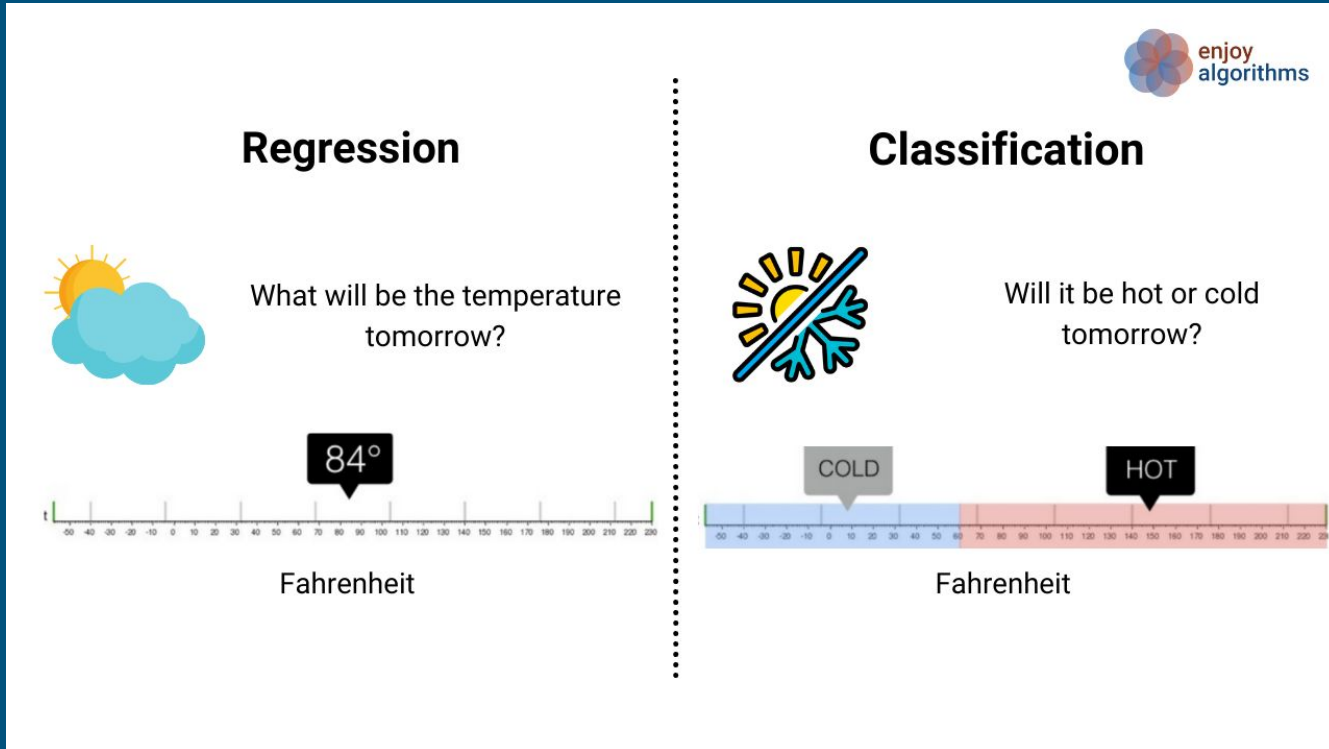
Unsupervised Learning (Clustering Algorithm)



Examples

- Example of Supervised and Unsupervised learning data sets
 - <https://archive.ics.uci.edu/>
- Example of Reinforcement learning
 - <https://www.youtube.com/watch?v=V1eYniJ0Rnk>

Supervised Learning



Supervised Learning

Classification



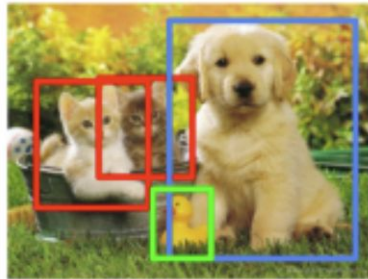
CAT

**Classification
+ Localization**



CAT

Object Detection



CAT, DOG, DUCK

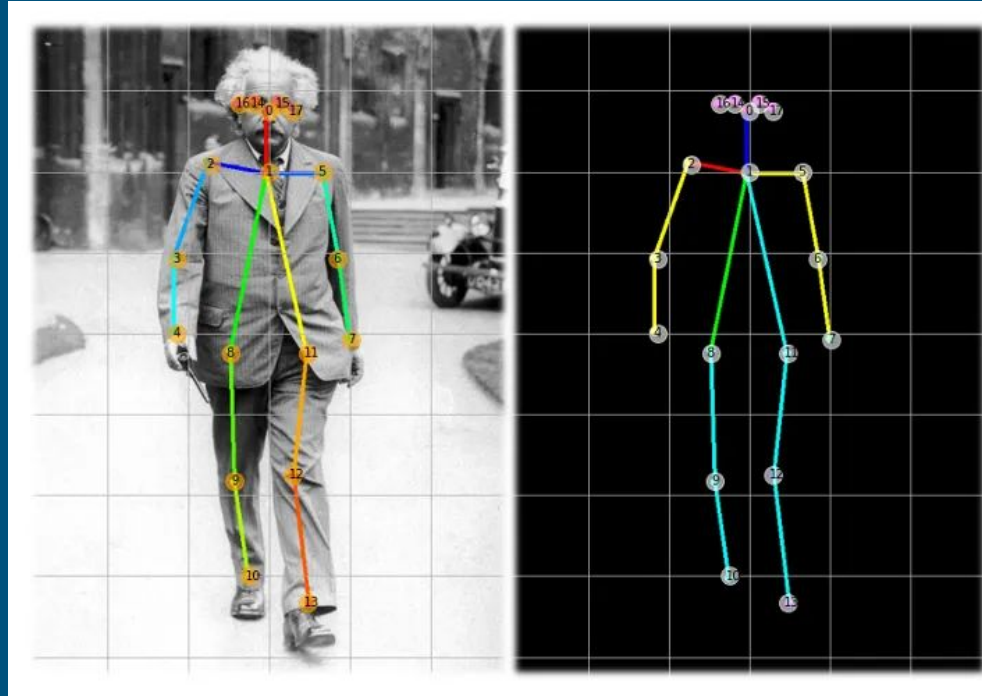
**Instance
Segmentation**



CAT, DOG, DUCK

Source: Michal Maj. Object detection and image classification with yolo, 2018.

Supervised Learning



Source: <https://towardsdatascience.com/realtime-multiple-person-2d-pose-estimation-using-tensorflow2-x-93e4c156d45f>