1 Machine Learning

Machine learning is a type of traning that the computer follows by example by a recursive process of looking for new examples.

1.0.1 Supervised Classification

Process where tags and labels are given, mayority oof the process is data processing.
FEATURES $\longrightarrow$ Attributes or characteristics for classification
LABELS $\longrightarrow$ Categories

1.0.2 Naive Bayes

Prior $\longrightarrow$ Probability of Cancer $\longrightarrow$ P(C) = 0.01
TEST results probabilities
SENSITIVITY $\longrightarrow$ True positivites $\longrightarrow$ P(p) = 0.9
SPECIFICITY $\longrightarrow$ True negatives $\longrightarrow$ P(!p) = 0.9

Bayes Rule
P of cancer with a positive result

$$P(pos, C) = P(C) \times P(pos|C) = 0.9 * 0.01 = 0.009$$

$$P(C|pos) = \frac{P(C)P(pos|C)}{P(pos)}$$

Called Naive because is just based on an evidence that does not consider order or motive

Strengths	Weakness
	Order
	Motive ("Chicago Bulls")

2 SVM (Support Vector Machines)

Creates a line that maximizes the margin
MARGIN $\longrightarrow$ Maximizes the distance between the closets observations to the hyperplane points
OUTLIERS $\longrightarrow$ being points that has not clear characteristics of belonging to a class
LINEAR and NON-LINEAR $\longrightarrow$ The same idea
Overfitting $\longrightarrow$ When the model only works in training data,

3 Decision Tree