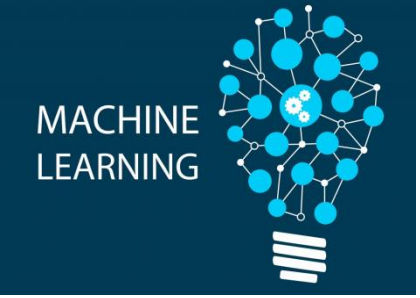
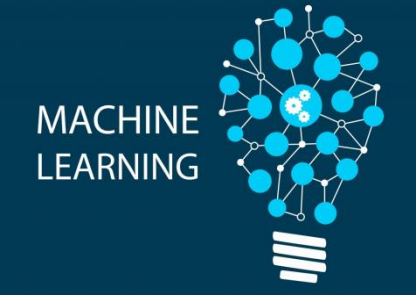


K-Nearest Neighbor(KNN) Algorithm Classification

Diptangshu Banik

Twitter - @dipbanik

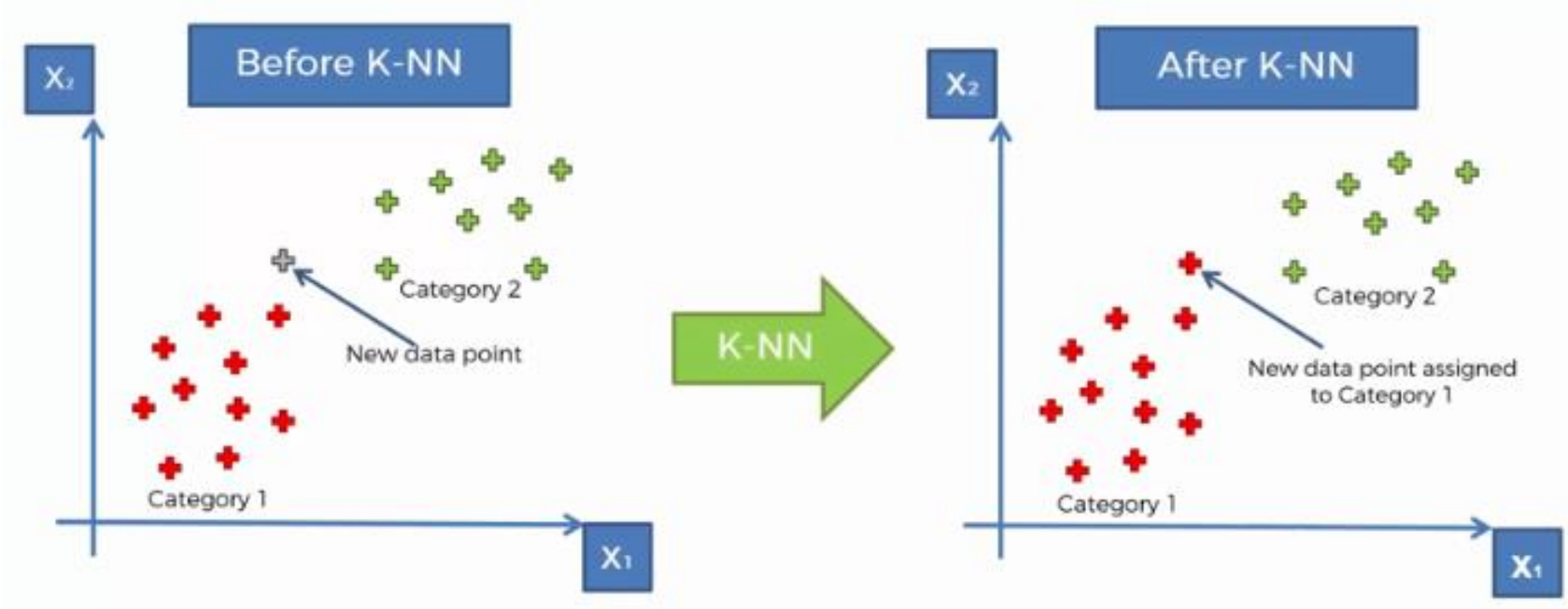


Algorithm

- Step 1 : Choose the number K of neighbors.
- Step 2 : Take the K nearest neighbors of the new data point, according to the Euclidean distance.

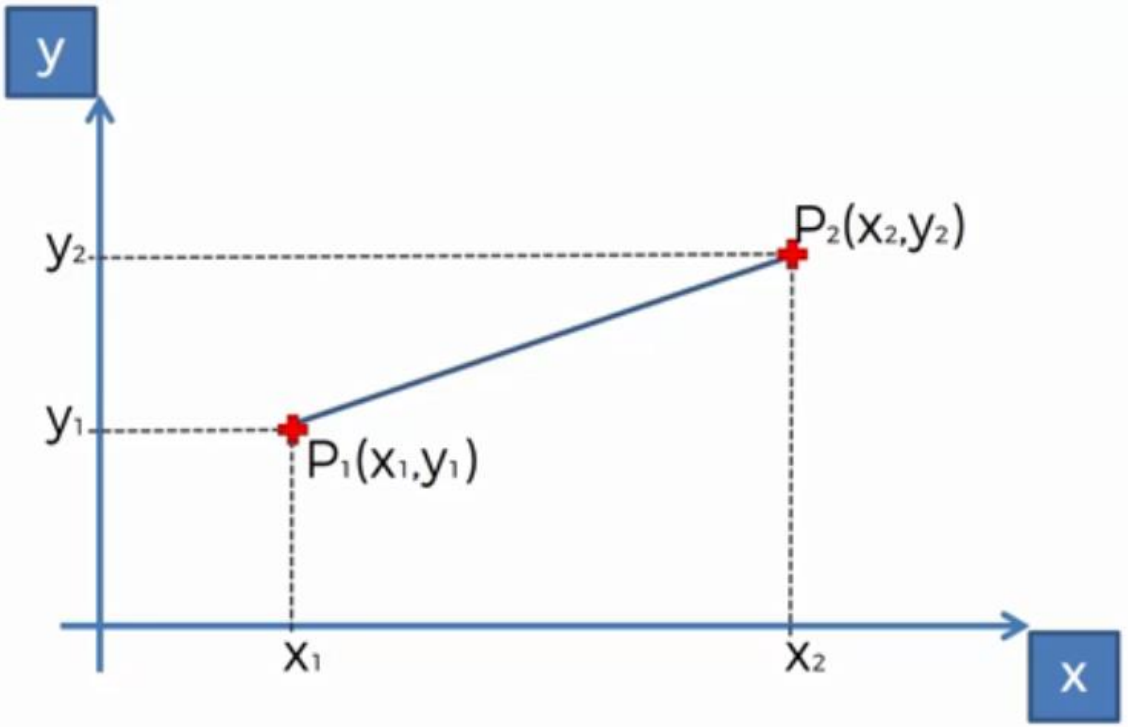
  Note – Other distances like Manhattan distance is also considered but Euclidean distance is the most common.
- Step 3 : Among these K neighbors, count the number of data points in each category.
- Step 4 : Assign the new data point to the category where you counted the most neighbors.

MACHINE
LEARNING



MACHINE LEARNING

Euclidean Distance

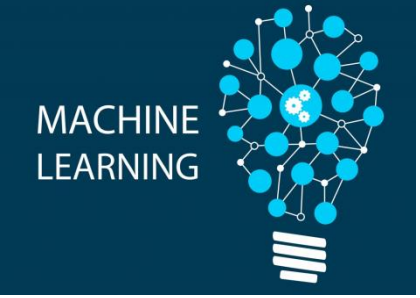


Euclidean Distance between P_1 and $P_2 = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

MACHINE LEARNING

KNN Representation

- K by default is 5.



End Notes

- KNN algorithm is one of the simplest classification algorithm.
- Even with such simplicity, it can give highly competitive results.
- KNN algorithm can also be used for regression problems. The only difference will be using averages of nearest neighbors rather than voting from nearest neighbors.