

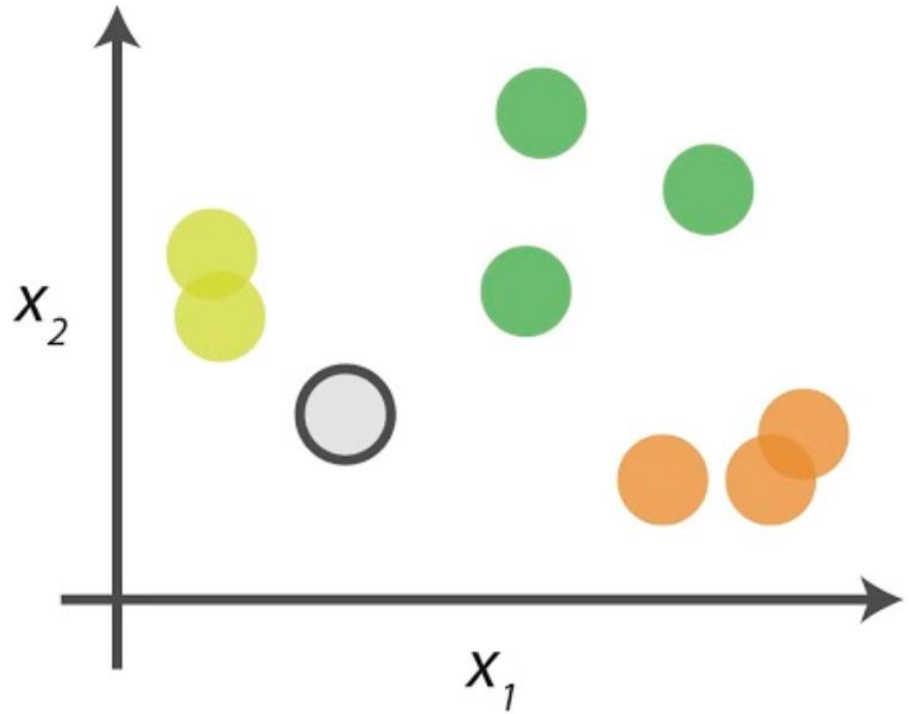
K Nearest Neighbors

What is it?

- Non parametric algorithm used for classification and regression
- Input: k closest training points
- Output:
 - Classification: class membership
 - Regression: value obtained as mean of values of the neighbors

How does it
work?

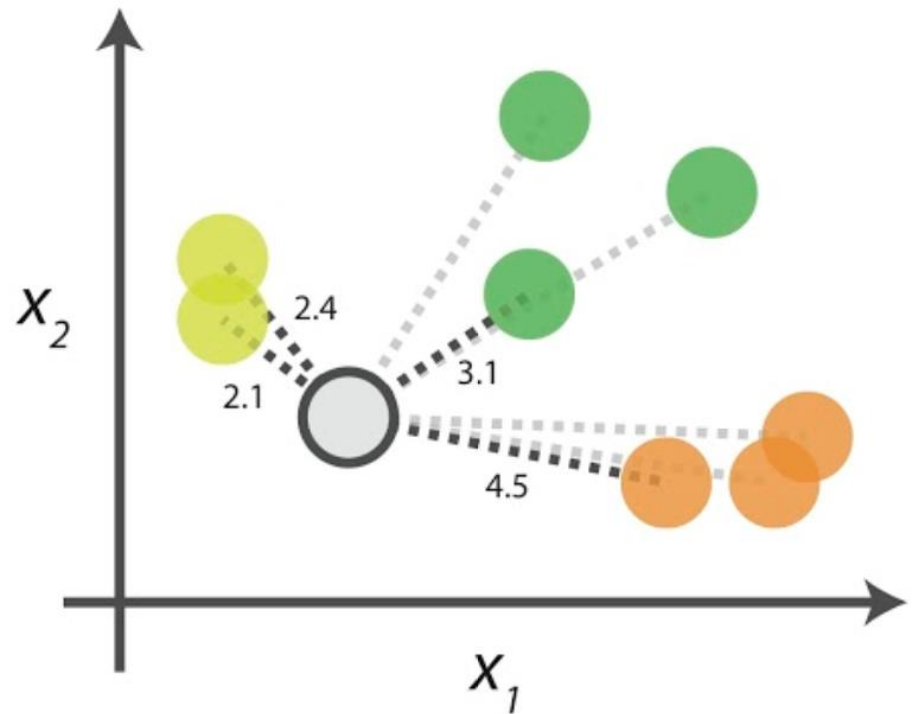
1. Look at the data



We want to classify the gray point
into one of the three classes

How does it
work?

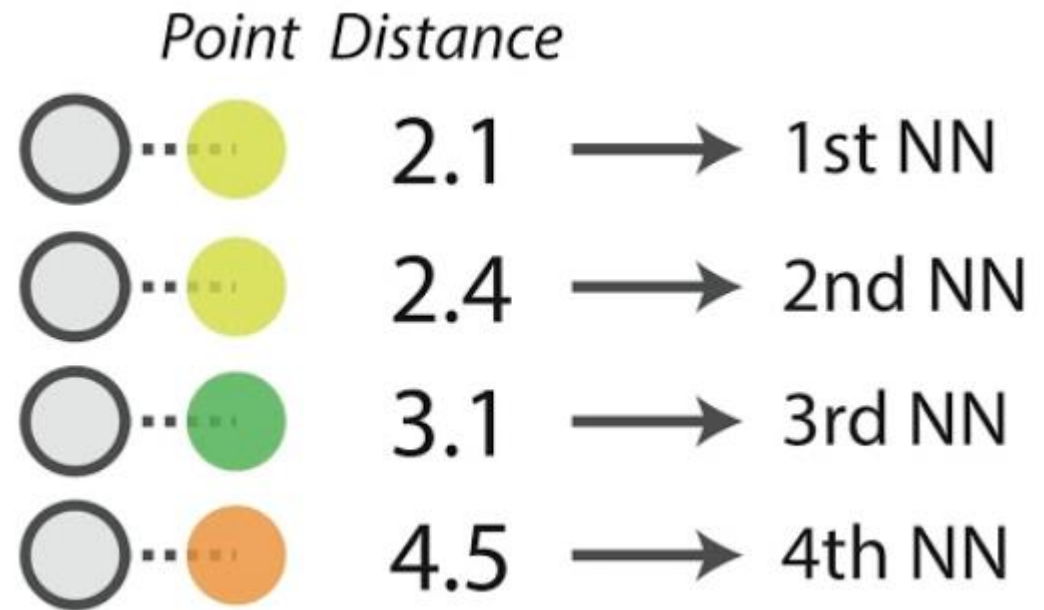
- ~~1. Look at the data~~
2. Compute distances



Compute distances between the gray point and all other points.

How does it
work?

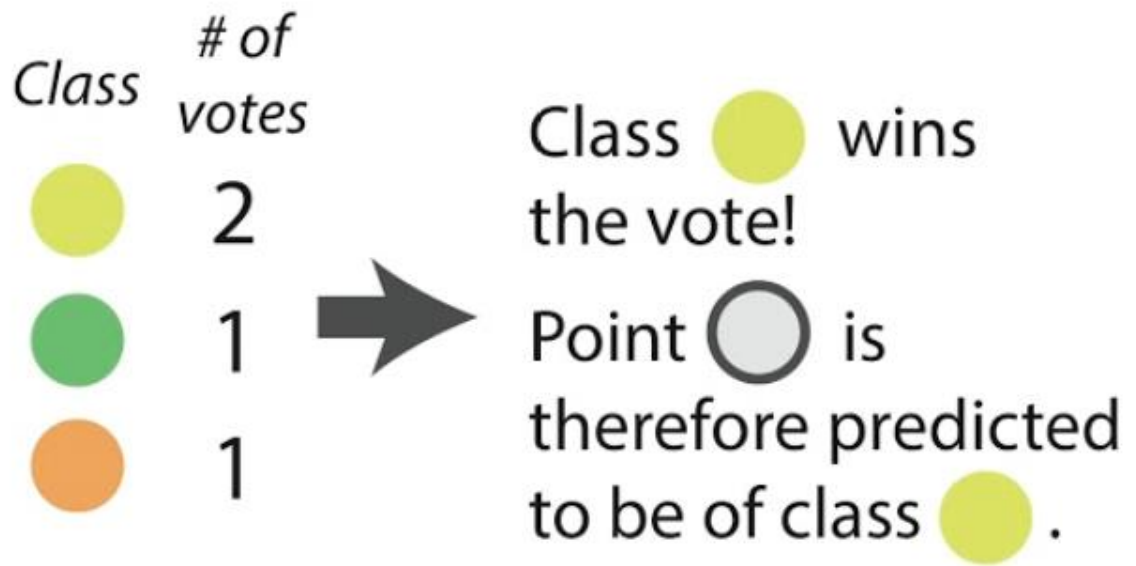
- ~~1. Look at the data~~
- ~~2. Compute distances~~
3. Find neighbors



Fine the nearest neighbors by ranking points by increasing distance. We used KNN with 4 neighbors.

How does it work?

- ~~1. Look at the data~~
- ~~2. Compute distances~~
- ~~3. Find neighbors~~
4. Vote on labels



Since the majority of the nearest neighbors of the gray point are yellow, the gray point is classified as yellow.

"That's all Folks!"



Cartoon Songs From
MERRIE MELODIES & LOONEY TUNES