Enclidean Distances

Euclidean distance is a measure of the distance of w Two points in amuti-dimensional space.

It is coldinated on the square root of Sim of the Squares of the Sifferences between the cooldinates of the two points.

The Importance of Euclidean distance in madine learning is that it is
glen used as a Similarity metric between - I wo data points.

This can be used in clustering algorithms, for example, where data points
that are closes together of Euclidean distance are more likely to be
grouped toghter in the Same Mider.

Addionally, it is used in K-nearest neighbors algorithm and Break regression model.

We will calculate the Exclident distance of one object and display ats

Shillhouette Sere, in order to illustrate the math beand

euclidean - distances behind skleain metrice

to the purposes of exemplification, we will only calculate the distance between one object within the cluster and the other offers objects that belong cluster and also the distance between the affirmentioned point belong cluster and also the distance between the affirmentioned point belong cluster and also the distance between the affirmentioned point belong cluster and also the distance between the affirmentioned point belong cluster and other elements in the other clusters and the Stillhoutte score and other elements in the other always and the Stillhoutte score

of Calphe) = the average distance setween our element and.
the others within the duster.

B (beta) = the distance between ourselement and the

glin used as a Similarly metric of mean two data-points. This can be used in clustering algorically Browned - tegling in - the Sease Olastes of End Assert to more the standard wind the plant on the planting of the planting of

will brown with items

Hydrib Low d(AB) = V (XB-XA)2+ (YB-YA) d(A1B) = 1(1-1)2+ (117-019)2

- I we will me orged siented gragraming. After creating the class Endid We will instaliate an object receiving the parameters a, b, c, d, e, f, c, b, and i.

 These parameters will be mames hando my generated by names getfing.
 - and the distances will be arbitary, given the purpose of showing how to Calculate the Stillhouette Scale. to Calculate the Stillhouette Score.
 - The function clusters will return three firsts, containing the elements In such cluster and A.

of Capper - the wider distance between our - (appert on . Stable of the midting a who she

-29 hours toward months and the (com) 9 Jalan Harrin

- The function cluster-a will return the Euclian distances between A-B and A-C as well as self-alpha and a Dela Frame with the elements of cluster and its respectives distances to & and y
- The finition cluster b. will see return the Euclian distances \$\mathbb{A} \to D_A \in \text{8} \\
 8 A F, as well as the any distance \$\mathbb{A} \omega A cluster \$\mathbb{A} \omega A \text{and} a \text{D} ta Trame with the elements of cluster and the respective distances to 2 and 6
 - The function cluster C will return the Eucliden distance \$100 A-9,0+1

 & A-I, as well as the average distance \$100 A-distance \$100 A-Gister 3 and a

 DataTheme with the elements of duster and its respective distance

 to x and y
 - V The function sull house will return the values of B (Seta), of Capita) and the Sidhoute Scale of A.
 - Vitre standoutte of a claster is the average of the side of all of its elements.